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tional Air Races Winners

930-1948—*See page 33*

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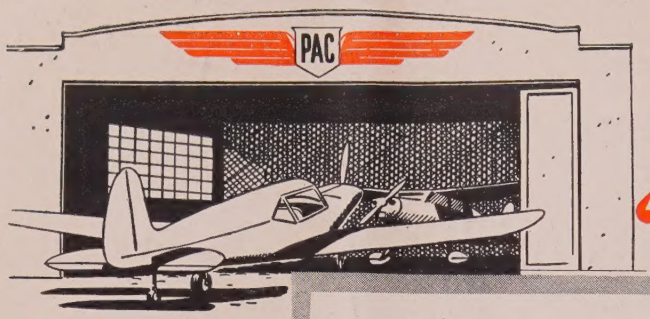

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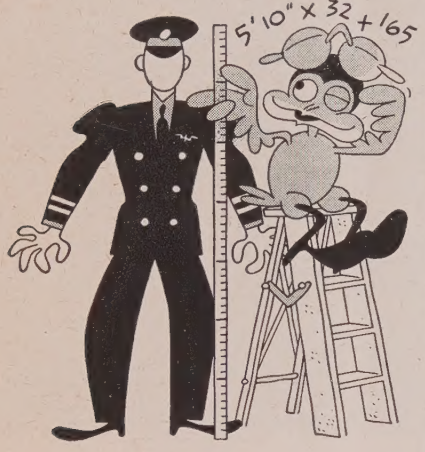
The Birdmen's Perch

By *Major Al Williams*, ALIAS, "TATTERED WING TIPS,"
Gulf Aviation Products Manager, Gulf Bldg., Pittsburgh 30, Pa.



Know what the average airline pilot is like?

Always first with the latest, The Perch rushes results of a brand-new CAA study of airline pilots and co-pilots to you:

The average airline pilot:

is 32 years old . . .

has 4859 hours . . .

is 5 feet 10 inches tall . . .

weighs 165 pounds . . .

wears glasses 2.7% of the time!

And according to Flutter, when the average airline pilot owns his own putt-putt, he almost invariably oils and fuels it with Gulf Aviation Products!

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Why aren't you a Perch Pilot (bottom rung)?

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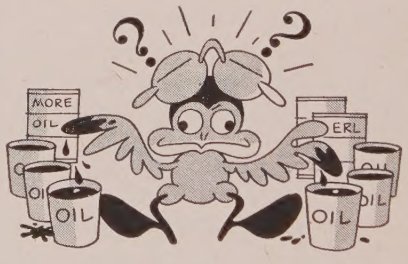

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Take Harold Lawson, of Mastercraft Aviation in Buffalo. He's a Gulf Dealer . . . but did that get him one of these rare commissions? Nossir! But this did:

"In 1926, the great 'Bambino' caught a baseball tossed from an airplane over Mitchell Field!"

And William Kraus writes from Hawaii to tell us that:

"The Consolidated L-13 takes off in less than the distance of the wingspan of the Consolidated B-36—230 feet!"

So each of these guys sent proof.

So each of them is now entitled to be addressed as "Your Majesty" by non-Perch Pilots.

Got a Fact? Post card? Well?

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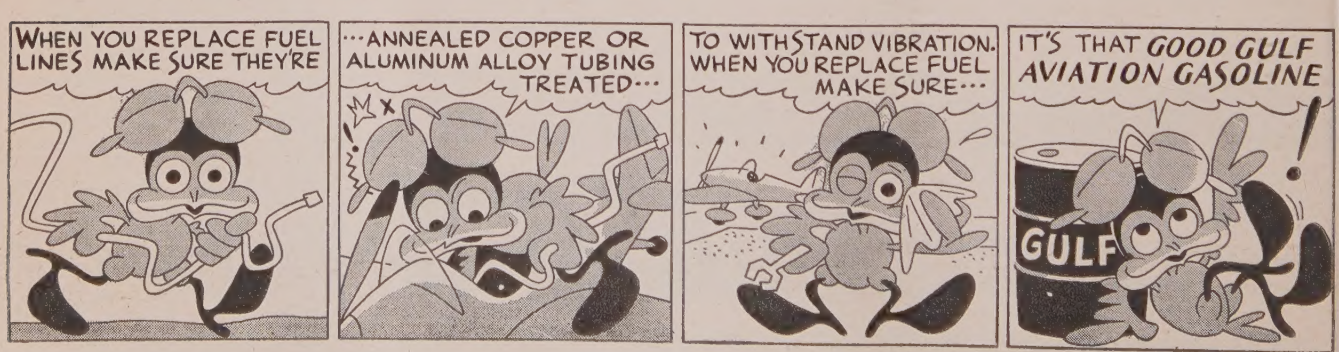
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Incorporating Air News

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SEPTEMBER 1947 VOLUME 6, NUMBER 9

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AIR YOUR VIEWS

One Canyon Missing

Gentlemen:

How come J. Davis Scott moves the Grand Canyon over into Colorado, just like that? ("When It's Spring," June, SKYWAYS.) Last time I flew over it was in Arizona, and it all seemed to be in one piece and in just about the right place. I've found it handy to have it there, too, because I have a couple of check points down there I often use to calculate my ground speed.

We do appreciate the fact, however, that he didn't dump it over in Utah, because we have several more just like it, only better, that we haven't had time to explore yet. But think how Colorado must feel. Arizona wouldn't mind —she tried to give it to the Navajos once, but those Navajos are smart people. Well, I'm going down that way soon, and hope Scott puts it back because it's a handy check-point.

LLOYD HOSKINS

Delta, Utah

We just sent Scott, in a pilotless B-17, to Colorado to repair damage. Equipped with prop-wash bucket and spoiler, he should have no trouble moving the Canyon back to Arizona.—ED.

•

Slip Talk

Dear Sirs:

I have just read the very good article entitled "Techniques of Slips" by Lib and Wil Bigler in the June SKYWAYS. They covered the subject thoroughly and presented it in excellent manner, but I disagree with them on one point. That is the method of entering a forward slip. They recommend leading with rudder. I think that leading with aileron produces a much smoother entry, getting away fom that uncomfortable yawing of the nose. As the wing goes down, the lowered aileron tends to produce enough drag to yaw the nose smoothly to one side of the flight path without the initial use of rudder. The amount of rudder used will depend on the degree of bank, and the degree of bank determines the steepness of the slip.

My main argument concerns the initial use of rudder which I consider a bad habit to get into. Excessive rudder produces excessive yaw which in turn decreases air speed in a hurry. Mr. Piper's Commandment "Thou shalt maintain thy airspeed lest the ground rise up and smite thee" is an excellent rule to follow.

LT. PAUL V. JACKSON

Fort Sill, Oklahoma

We think your way probably can be done just as smoothly as theirs—it's almost a question of whether you want ham with your eggs or eggs with your ham.—ED.

•

A & E Surplus?

Dear Sirs:

Regarding the letter on salaries for mechanics in the July SKYWAYS—I have startling information for you! I know why the A&E mech is so underpaid. I went to school under the GI Bill and got my A&E, and am still trying to find a job, while supporting a family of three. Every airport I went to for a job had one licensed A&E and anywhere from two to eight men, not licensed A&E's, working for 65¢ an hour and up. The one licensed A&E mech was in charge. There is the answer. The CAA thinks that a man must take all sorts of training and tests to prove he is capable of working on aircraft, yet they allow anyone at all to work on the planes so long as they are under the "supervision" of an A&E. So why bother?

PHILIP PETTIJOHN

Belleville, Illinois

Sounds to us as if the thing for you to do is find a field that is just opening, and has not yet hired an A&E. You might also contact the airlines and the aircraft companies.—ED.

•

Race Winners

Dear Sirs:

Can you give me a list of National Air Race winners from 1930 to 1939?

ROBERT WILLIAMS

Grand Haven, Michigan

Here's the list, as compiled by Al Bachmann. For details see "Pylon Pilots" in this issue.

Thompson Races

1930—Speed Holman, in *Laird Solution*, 201 mph
1931—Lowell Bayles, in *Gee-Bee 4*, 236 mph
1932—Jimmy Doolittle, in *Gee-Bee 11*, 252 mph
1933—Jim Wedell, in *Wedell-Williams*, 237 mph
1934—Roscoe Turner, in *W-W Special*, 248 mph
1935—Hal Neumann, in *Mr. Mulligan*, 220 mph
1936—Mike Detroyat, in *Caudron*, 264 mph
1937—Rudy Kling, in *Folkerts FK-1*, 256 mph
1938—Roscoe Turner, in *Turner-Laird*, 283 mph
1939—Roscoe Turner, in *Meteor*, 282 mph

Bendix Races (Los Angeles to Cleveland)

1931—Jimmy Doolittle, in *Laird*, 9 hrs., 10 min.
1932—Jimmy Haizlip, in *Wedell-Williams*, 10 hrs., 19 min. (Los Angeles to N. Y.)
*1933—Roscoe Turner, in *Wedell-Williams*, 11 hrs., 30 min.
1934—Doug Davis, in *Wedell-Williams*, 9 hrs., 26 min.
1935—Benny Howard, in *Mr. Mulligan*, 8 hrs., 33 min.
*1936—Louise Thaden and Blanche Noyes, in *Beechcraft*, 14 hrs., 55 min.
1937—Frank Fuller, in *Seversky*, 7 hrs., 54 min.
1938—Jackie Cochran, in *Seversky*, 8 hrs., 10 min.
1939—Frank Fuller, in *Seversky*, 7 hrs., 14 min.
* New York to Los Angeles

Greve Races

1934—Lee Miles, in *Miles & Atwood*, 206 mph.
1935—Hal Neumann, *Howard DGA-2*, 212 mph
1936—Mike Detroyat, in *Caudron*, 300 mph
1937—Rudy Kling, *Kling Special*, 232 mph
1938—T. LeVier, in *Schoenfeldt Special*, 263 mph
1939—Art Chester, in *Chester Special*, 263 mph

Stinson Voyager owner and family prepare for vacation take-off in America's No. 1 Utility plane.

Why more people are buying STINSONS *than all other 4-place planes combined!*

THE BEST WAY to discover the many reasons for the Stinson Voyager's overwhelming popularity, of course, is to have your Stinson dealer take you up on a demonstration flight. In the meantime, here are a few facts for you to consider:

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2 **Lower price.** Yes, the new Stinson Voyager and Stinson Flying Station Wagon actually cost *less* than any other 4-place plane in America . . . an advantage made possible by Stinson's 21 years of production know-how.

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5 **Stinson builds a Flying Station Wagon!** America's first combination four-passenger and "cargo" plane. Load capacity: Pilot, and 552 cargo lbs. The two rear seats can be replaced in 5 minutes to make it a 4-place plane.

6 **Adaptability.** Certified for wheels, skis, or floats. Perhaps, like many owners, you'll prefer floats, so that any handy waterway becomes your "landing strip."

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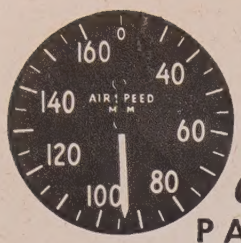

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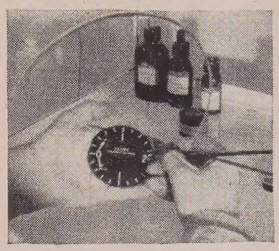

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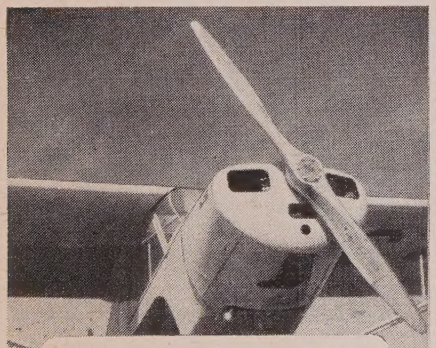

Right on the nose of the New Piper Cub Special

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PROP WASH

Aero Oddities

Over-Time. Army pilot flying a P-80 near Atlanta, Georgia, radioed Atlanta tower for weather report on Montgomery, Alabama. Tower called communications office which in turn requested report from Montgomery by teletype. Six minutes later, when Atlanta tower called back to report Montgomery weather, P-80 pilot said, "Never mind, I'm already there." (*W. Wood, Atlanta.*)

Fund Hopping. Rev. C. M. Russell conducted weekly radio broadcast over Minneapolis station. To raise funds for program, Rev. Russell landed his *Cub* in pastures of farmer listeners, took them for sight-seeing hops, then solicited funds. He netted $200 in one day. (*C. Russell, Mt. Carmel, Ill.*)

Auld Acquaintance. Student pilot Dick Sievert, on cross-country trip, saw plane in a field. From angle of wings, he decided plane had crashed. Sievert came in to offer help, found plane was a glider on emergency airfield and its pilot was childhood friend whom Sievert hadn't seen in 10 years. (*J. F. Scheuerman, Chicago, Ill.*)

Two Strikes. Two air cadets engaged in an aerial dog-fight one afternoon. Ships collided, but cadets were able to bail out. One plane spun in, crashing in local farmer's front yard. Other plane continued in normal flight, circled city then spiralled down to crash landing on same farmer's front porch! (*W. B. Otto, Pittsburgh, Pa.*)

Pin Money. Navy student pilot, after session with instructor, was sent up to practice maneuvers solo. It was later discovered that student pilot had been spending his solo two-hours per day operating out of farmer's fields, giving flying lessons to local youngsters at $3.00 per hour. (*C. Schriver, Fort Smith, Arkansas.*)

Tail Up. A flight instructor became annoyed with a particularly hard-to-teach student. Flying open cockpit one day, student complained she couldn't hold horizon because she couldn't see over top of the nose. Disgusted instructor retorted, "Okay, stand up," then two minutes later glanced into rear-view mirror. Student was riding the plane from the seat like a surfboard. (*J. H. Battison, New York.*)

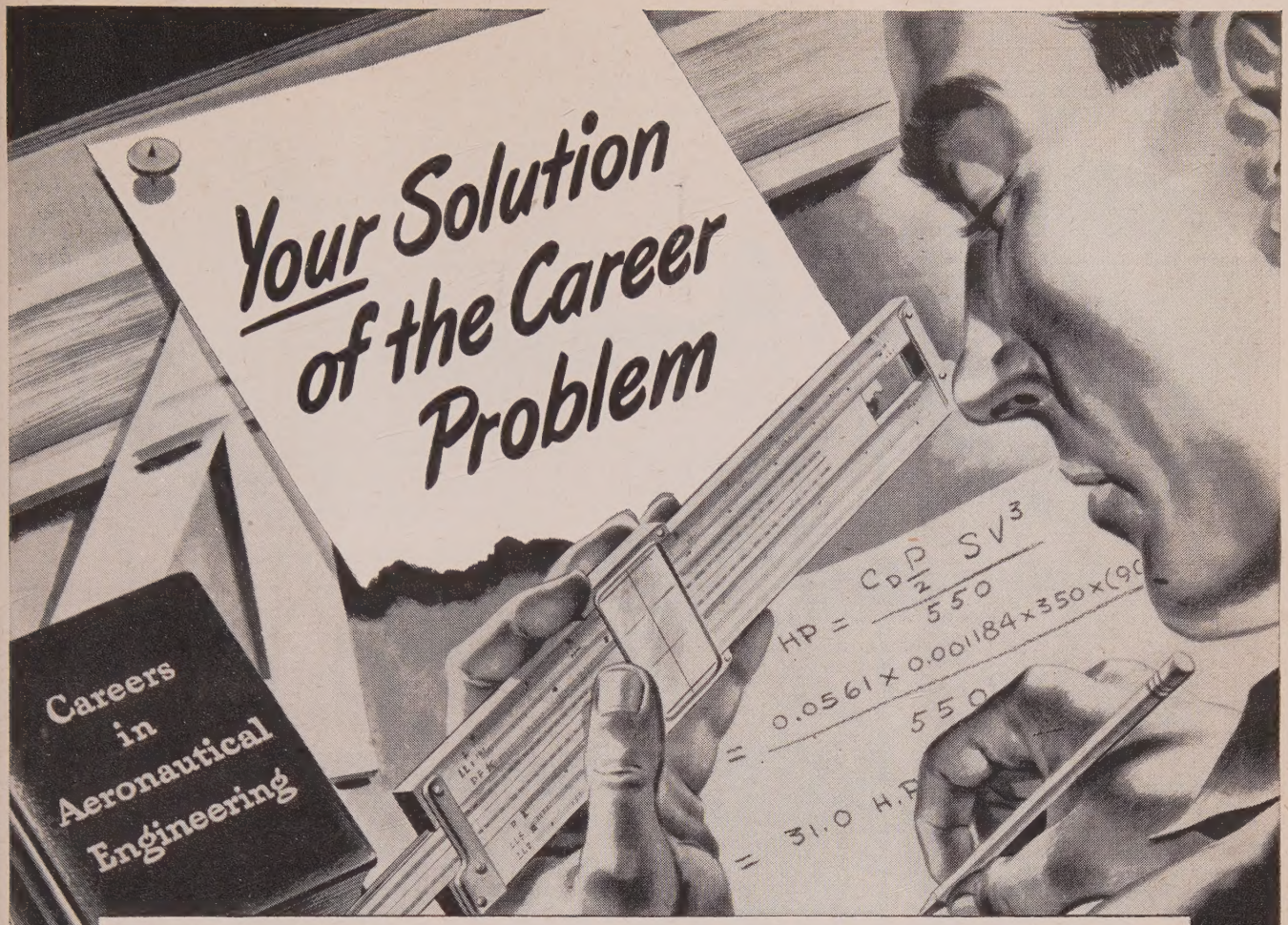
Continued Cold. Pilot Chester Huston, getting ready for summer cross-country, called weather station for report. Operator said zero weather to continue. Huston had been connected with ice company. (*B. Huston, Lawrence, Kan.*)

Wrong Lights. Two pilots on a dusk flight spotted bright lights below them, thought it was airport and landed. Found themselves alongside a carnival, with airport 15 minutes further away. (*C. F. Ruscitti, Milford, Mass.*)

Gas Station Guide. On downwind leg of rectangular pattern at Whitman Airpark in San Fernando Valley near L.A., the 3,200-foot landing strip is hidden by small range of hills. Flyers draw a bead on a filling station, located conveniently at one end of leg, use it as guide until they turn onto base leg. (*De Thurmond, N. Hollywood, Calif.*)

Att'n Readers:

If you have any news-note oddities pertaining to aviation, send them to SKYWAYS, Box 17, 444 Madison Avenue, New York 22, N. Y. Five dollars will be paid the sender of each "oddity" printed. Contributions cannot be returned unless accompanied by stamped addressed envelope. The decision of the editors is final.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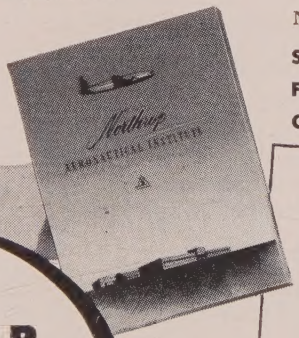

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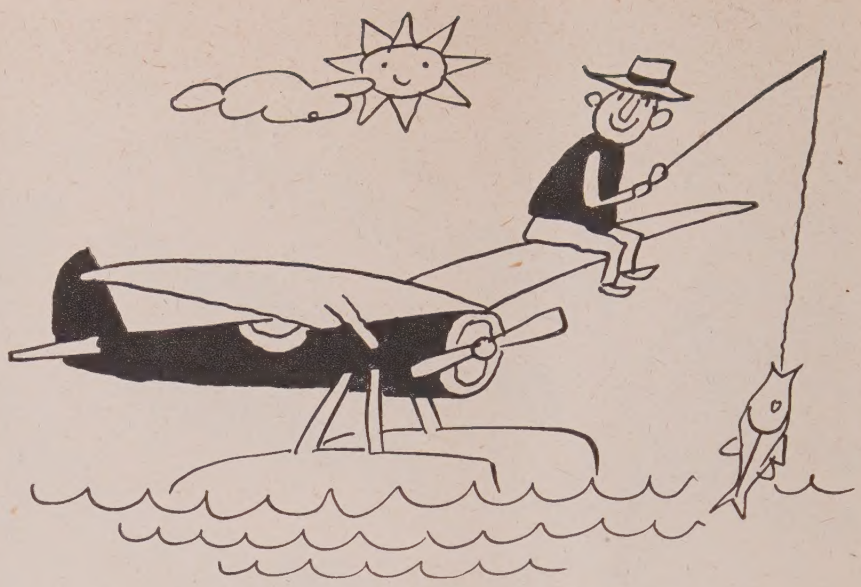


Where to Fly

New Hampshire

The state of New Hampshire proudly boasts of more than 1,300 lakes and ponds and more than 40,000 miles of rivers and brooks. That's a lot of fishing ground to offer the sportsman. Thanks to the high altitude and relatively cool climate, fishing during the warm summer months is popular and good. Brook trout, salmon, lake trout, etc., are fished until September, although after September 1st trout and salmon fishing is limited to fly fishing in ponds and certain large streams. Bass, perch, pike and whitefish angling is popular through October. The fall season in New Hampshire attracts many vacationing families who come to enjoy the numerous county fairs, and upland hunting which opens in October.

Accommodations for visitors vary from camps and farm boarding houses to cabin groups and large resort hotels. Swimming, boating, horseback riding, golf, tennis and summer theatres are available.

Via the commercial airlines, the state of New Hampshire is served by Northeast Air Lines as well as several good charter services. Among them is Dartmouth Airways with bases at Concord, Newport and Lebanon, N. H.

Pilots would do well to plan their air trip stops via the New England Airport Map, available by writing to New Hampshire Aeronautics Commission, Concord, N. H.

Personal Pilot Information:—

Lakes Region Airport—*Wolfeboro (Cl. 1)—El. 580 feet. Turf runway, N/W. Wind Cone. Obstructions—Trees both ends of runway. T-hangars, tie-down, mech. available. 80 Octane fuel. Rest rooms & restaurant at field. Car to town 3½ miles W. (Boston Chart)*

Lakes Region Airport will make overnight accommodations upon receipt of telephone call or telegram. Seaplane base is now under construction. Picnic facilities are provided.

Gate City Airpark—*South Nashua (Cl. 1)—El. 148 feet. Unpaved runway, NNW/SSE. Obstructions—Hill, NNW-end of runway. T-hangars, tie-down, mech. available. 80 Octane fuel. Rest rooms & restaurant at field. Taxi and U-Drive-It to town 4 miles (Boston Chart)*

Portsmouth Airport—*Portsmouth (Cl. 4)—El. 94 feet. 3 runways, NE/SW, E/W, SE/NW. Night landing facilities if ETA is reported. Rotating beacon, range, runway, obstruction light. Lighted wind cone. Hangar, tie-down, A & E mechs. available. 80, 91 & 100 Octane fuel. Private car, bus or taxi to town 2 miles W. (Boston Chart)*

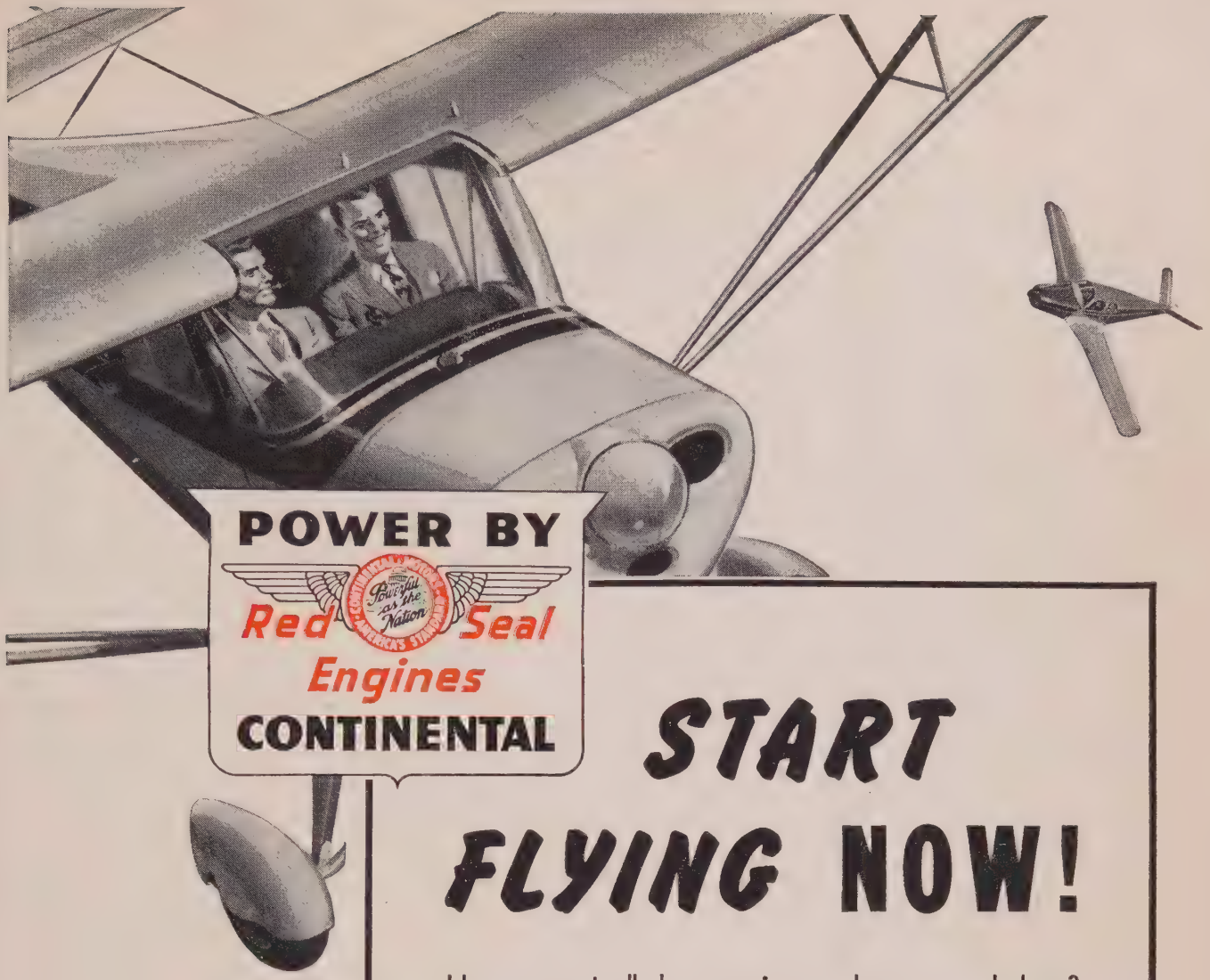
Sunapee Seaplane Anchorage—*Sunapee. On Sunapee Harbor, West side of Lake Sunapee adjacent to town. El. 1091 feet. Dock, fuel. No commercial flying. (Albany Chart)*

Merrimack Bay Airpark—*Concord (Cl. 1)—El. 260 feet. Turf strip, N/S. Boundary day markers, wind cone. Obstruction—Trees, N,S; Pole line, S. 2 hangars, 80 Octane gas. Taxi to town. (Boston Chart)*

Twin Mountain Airpark—*Twin Mountain (Cl. 1)—El. 1430 feet. Sod strip, E/W. Wind cone. Obstructions—Flag pole, NW; Bldg., W. Restaurant, hotel and cabins at field.*

White Mountain Airport—*North Conway. (Cl. 1)—El. 540 feet. Sod strips, NW/SE, E/W. Boundary day markers, lighted wind cone and tee. Obstructions—Pole line, W; Trees, W. SE, NW; Mountains, E. Hangar, minor repair. 80 Octane fuel. Sleeping quarters, recreation for visiting pilots. Taxi to town 1 mile SSE. (Lewiston Chart)*

Editor's Note:—Airport information supplied in the "Where to Fly" columns is to be used as supplementary material only. For more detailed info we suggest that you consult CAA's Airman's Guide. We invite your criticism and correction of any errors that might occur. Your information will help us to provide personal pilots with necessary and accurate airport data.



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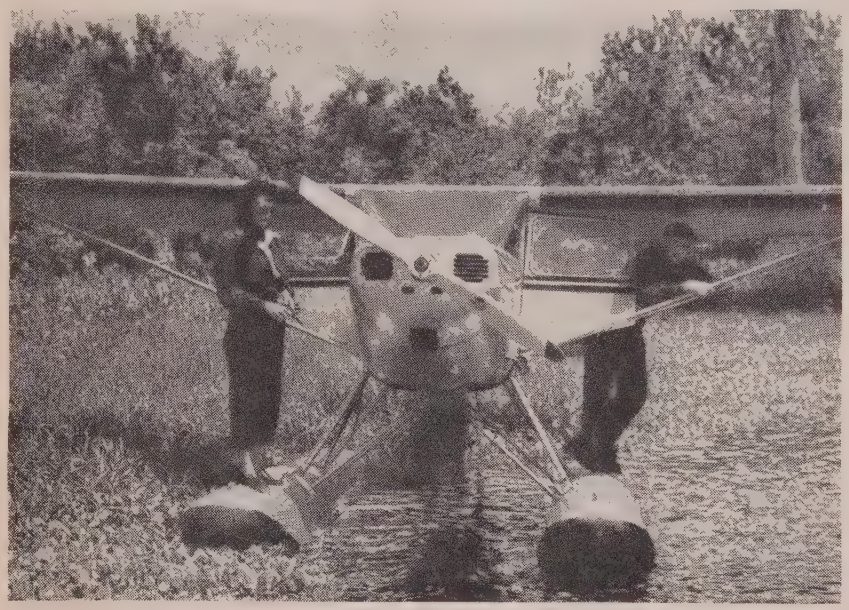
AIRCRAFT ENGINE DIVISION — MUSKEGON, MICHIGAN

Flying Sportsman News

INTERNATIONAL BORDER CROSSING IMPROVED

BASS FISHERMEN BUY PLANE FOR FAVORITE SPORT



ARDENT FISHING enthusiasts, Mr. and Mrs. A. B. Taylor, of Orlando, Fla., decided they wanted more time for fishing. They solved the problem by buying a Cessna on floats, just for fishing. Above, they are angling on Blue Cypress Lake, in the Everglades

TO ABALONE BY AIR

Abalone is a strange sort of ocean-snail which has chosen just a few edges of the Pacific Ocean for its home—the California and Mexico coast and a spot or so in China. A leathery sort of seafood, it is perverse and hard to find, but once pried from its hiding place, it is a tender and mouth-watering delicacy known to many.

The abalone clings to rough stretches where seaweed and rocks offer protection, and for most of the year, it is out of reach of sportsmen. But when the water is drawn back by a minus tide and the ledges are naked for a few minutes, the battle for abalone is on.

The searchers rush to favorite coves by all available tranportation—including airplane. The highways are crowded, along with the hotels and motor courts, and the smart searchers have learned to miss the mad rush by taking to the air.

One of the first to take to the air was Arthur Scarlett, Sacramento Valley (Calif.) rice grower, who made his first abalone flight after promising the Grimes, Colusa County, fire department an abalone dinner. With only a couple of hours in which to make good, he hired Alan Thaver and his Piper *Cub* to fly the 110 miles to the field at Little River on the Mendocino County coast. Scarlett got his limit of 10 and a little over an hour later they were on the fire in Grimes.—*Keith Dennison.*

Week-End for Sea and Land Planes

One mile due east of a 6,500-foot paved runway near Myrtle Beach down South Carolina way is the Crescent Beach hotel, within hearing distance of the lapping waves of the Atlantic. Alongside the air strip is a 300-foot wide inland waterway, with mooring facilities in a yacht basin 500 yards downstream. Ocean swimming, surf and deep-sea fishing, or even hunting, is available to the week-end pilot who parks his plane, with or without floats, here while he parks the body at the Crescent Beach Hotel.

Also in South Carolina, what used to be the Beaufort Naval Air Base has been taken over by W. D. Chitty, Jr., and E. W. Pike, Jr., of the Beaufort Flying Service. The boys run charter trips for fishing parties to a nearby beach, and for hunting parties to the various marshes. They claim their ducks, marsh hens, bass and trout can't be beat.

EXCURSION RATES OFFERED

Special excursion rates to vacation areas are coming into vogue. American Overseas will carry the vacationist to Newfoundland and back within 45 days. Chicago and Southern offers 16-day excursions to Havana at a 25 per cent reduction, and other 30- and 90-day excursions with stop-over privileges.

Mexican and U. S. flyers get together to eliminate red tape

Realizing the importance of quick, efficient, and economical border crossing, the Aviation Committee of Douglas, Arizona, Chamber of Commerce are trying to work out a satisfactory solution which will enable private planes to cross the border with little or no difficulty.

Some progress already has been made, with Mr. Luis Orci, a private flyer and president of the Agua Prieta Chamber of Commerce, taking the initiative in expediting crossings. A recent crossing by two Beechcrafts on a pleasure trip was made in 45 minutes, an example of the improvements that have already taken place.

Mr. Orci says that when Douglas airport officials can show enough traffic to warrant the move, the Mexican airport will be extended to join the International Airport, when planes will be able simply to taxi across the line without even the necessity of the passengers leaving the plane.

FREEZING COMPARTMENT FOR SPORTSMEN

Good news for the hunter or fisherman who wants to show his catch to the folks back home, is the new portable freezer made by the Weber Showcase and Fixture Co., 5700 Avalon Blvd., Los Angeles, California.

Although small enough (25" x 16" x 15") to carry conviently in the larger lightplanes, the "Porta-Freeze" has ample space to carry a large supply of food, beverages, fish, or game. Special insulation permits case to be used for either hot or cold foods or beverages.

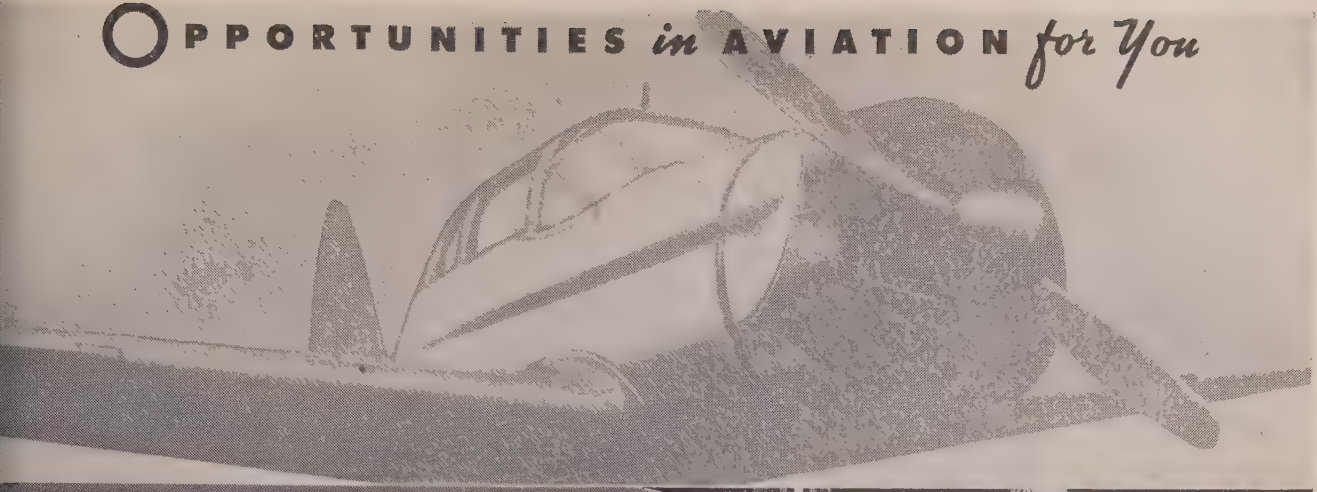
VACATION SPOT OFFERS FREE PLANE RIDE

Offering just about everything imaginable in the way of diversion for the vacationer is Sky Lodge, at Jackman, Maine. Best of all is the 2200-foot E/W landing strip just one mile from the lodge, and the seaplane ramp on the lake across the street. There are no tie-down charges, and you don't even have to hire a taxi!

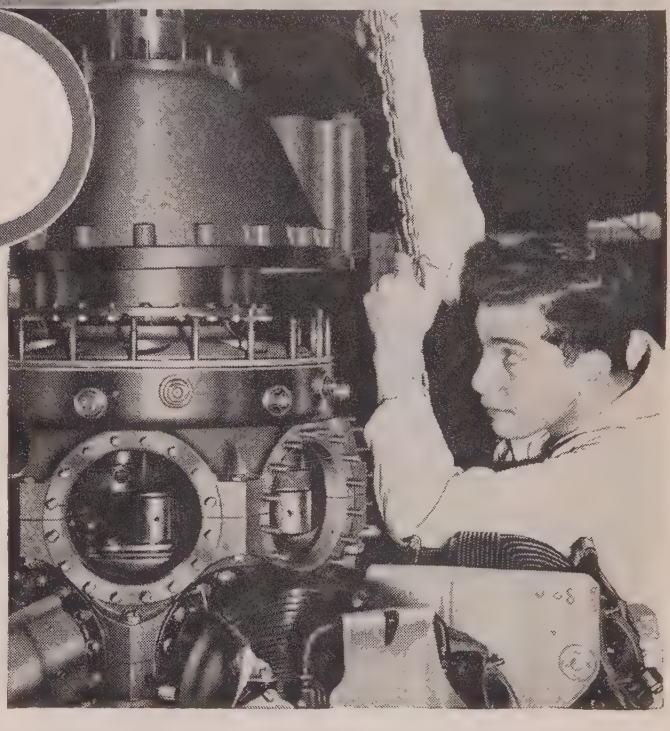
As a very special on-the-house treat for the train-traveler, Sky Lodge will take you, once a week, on a 100-mile plane trip around the countryside. They also make their planes available for other trips you care to make.

There is a cocktail lounge, spacious bedrooms with inner-spring-mattress beds, stone fireplaces, a swimming pool, tennis courts, a golf course, canoeing, croquet, and even sound movies in the evening. For the more rugged visitor there is trout, togue, and salmon fishing in over 100 lakes and streams, and bear and deer hunting in the famous Maine woods. Fishing and hunting licenses may be purchased at the Lodge.

OPPORTUNITIES *in* AVIATION *for You*



Airplane and Engine MECHANIC



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SUNSET SCHOOL classroom is inside C-46. Instructor, and former WASP, Betty Thompson explains instruments

Aviation Is Kid

By DON DOWNIE

THE little red schoolhouse now has wings. A modern C-46 transport plane serves as a classroom where students learn meteorology, navigation and aviation mechanics right along with readin', writin' and 'rithmetic. A surplus AT-6, a Fairchild PT-19 and an Aeronca trainer are tied down on a full-sized airport right on the school grounds.

No, this complete flight line isn't the property of an advanced technical school. This aviation department is all part of the regular school program of an isolated grammar school in the "Grapes of Wrath" area of California.

SCHOOL heads are Prin. Thompson and Supt. Bancroft

Fifth through eighth grade students of the Sunset Senior Elementary School may take aviation subjects as an elective if they wish, rather than agriculture, shop, business training, drama or band. Aviation problems are taught by a former Wing Commander of the WASP's, Miss Betty Thompson. Her classes include theory of flight, meteorology, navigation and the identification of planes and their parts. She will give Link trainer instruction as soon as equipment, donated by a local service club, arrives. A course in aviation mechanics, including engines, welding, models and airplane construction is taught by a former Air Corps maintenance instructor, George Valos.

"Why teach them aviation so young? Wouldn't high school be soon enough?" asked skeptical Kern County officials in Bakersfield. School records supplied the answer by showing that 75 to 85 per cent of students from this area never even enter high school. Almost half the Sunset School's student body come from the nearby Arvin Migratory Worker's Camp and nearly all quit school at 16, when they may legally work full time in California.

"We try to give these youngsters part of what they would learn in high school while they are still

AIR VIEW shows the C-46 located just off the runway

STUDENTS repair gas tank on PT-19 while other students unpack war surplus prop bought for $10

WELDING is one of subjects taught. Here Instructor Valos shows a boy how to use machine

Stuff

in the grades," says District School Superintendent Peter Bancroft. Mr. Bancroft actually bought the school's bulky C-46 with $270 of his own money when it became surplus last summer. Since no funds were available during vacation, Mr. Bancroft paid $200 for the plane, $50 to an ex-Burma Hump pilot to ferry the C-46 150 miles from the Ontario, California, surplus depot, and $20 for gas and oil. Both Mr. Bancroft and Aviation Shop Instructor Valos flew on the delivery trip. Since the landing field on the school grounds was not yet built, the plane was landed on the Weedpatch Airport near Arvin, California, one mile from the Sunset School.

Four fire engines from Kern County, a detail of Deputy Sheriffs from the California Highway Patrol and hundreds of nearby residents turned out to watch the transport land. Farmers cut down fences, filled irrigation ditches, furnished chains and shovels, and contributed two tractors with drivers to pull the plane to the school grounds. Full power from both the tractors and the transport's engines was required to taxi the 20-ton plane over the soft, fertile soil. To repay the Superintendent for the

CELESTIAL navigation gives students a new reason for studying math. Star chart study is fun

EVERYBODY on school staff flies. Even Custodian L. Clark hops his own Aeronca after work

AIR SHOP students who will take controllable-pitch prop apart and study details handle it with great deal of care

transport, the school student body and Parent Teacher Association conducted a carnival after school opened that made a $2,013 profit. Tours conducted through the C-46 for visitors netted over $50 of that total. The C-46 didn't cost the school district a cent—and, in fact, netted them some profit!

"Our housing problems are critical, and where else could a classroom be purchased for $270 that seats 35 children, contains a great quantity of valuable teaching aids, and creates an unprecedented atmosphere of novelty for the child?" asks Superintendent Bancroft. "The teacher uses the navigator's seat and desk for his own desk while the pilot's compartment is used only for aviation training."

The little AT-6 was a cinch to handle after rolling the big transport across open fields. The two-place surplus trainer was merely taxied along the highway from the Weedpatch Airport and into the field adjoining the school. Each student in the Advanced Aviation Maintenance class is permitted actually to start the AT-6 under the supervision of Mr. Valos. A wire-covered propeller guard, similar to a baseball backstop, is pushed in front of the plane before starting, and one student stands nearby with a surplus Army fire extinguisher. Wobble pumps, mixture controls, switches and propeller governors are no longer vague mysteries to these students, for they have actually used them all. Gasoline for this starting practice, so exciting to the youngsters, was drained from the tanks of the C-46. "When this gas supply is exhausted, we may not start the AT-6 so often," says Mr. Valos.

Beneath the broad 108-foot wings of the C-46 that once carried supplies across Africa are now an array of aircraft accessories. Spare engines, propellers, hydraulic jacks (*Continued on page 46*)

SUNSET FIELD is closed to all operations except those of its staff. Bancroft (*left*) warms up his PT-19 prior to a take-off after day's classes in C-46 (*below*) are over

FLYING NEWSMEN

Nation's newspapers use airplanes as aids to news coverage

By LEE IRWIN

IT might happen this way on any one of a growing number of newspapers throughout the country some day this week.

"Jones, picture desk, speaking. Two miles outside Lawrenceville? Okay, have a car at the county airport in an hour. We'll send a photographer. No, you file the story over the wire. Check. So long . . .

"Operator, get me Johnny Rogers at the Municipal Airport . . . Hardwood Furniture Factory up in Lawrenceville. Yeah, Arkwright County. Is the plane ready to go? We want the pix by 3:30. Think you can make it? Check. Shoot at least one aerial. There'll be a car at the airport to pick you up."

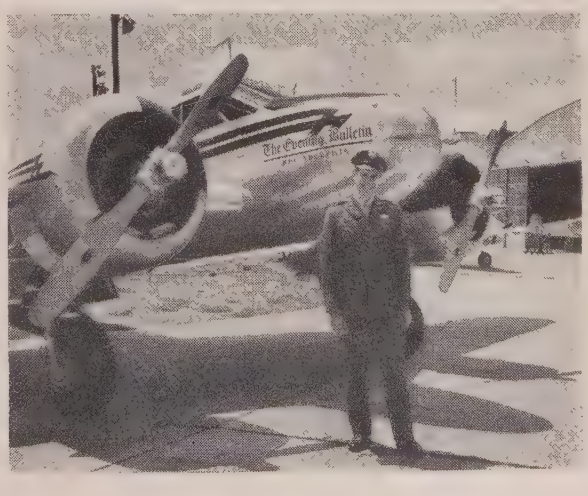
Yes, it might happen just about like that because newspapers have taken to airplanes in a big way to cover the distant stories that make the front pages. The stories that warrant sending out a photographer and possibly a reporter on a special plane ride usually fall into the disaster category: big fires, transportation accidents, ship wrecks, jail breaks, mine disasters and spectacular police chases.

Instead of waiting for (*Continued on next page*)

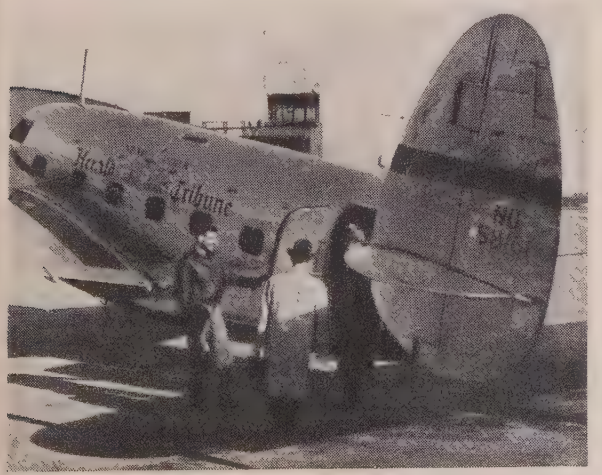
N.Y. *DAILY NEWS* recently purchased a Grumman *Mallard* for reporters' and photogs' use in news gathering

TULSA *TRIBUNE* uses four-place Stinson *(above)*. The Photogs are L. Gillette *(right)* and R. Craig. Des Moines paper calls its two-place ship "Good News VIII"

PHILADELPHIA *EVENING BULLETIN* recently bought a twin-engine *Beech*. Its pilot is former AAF'er Heilbronn

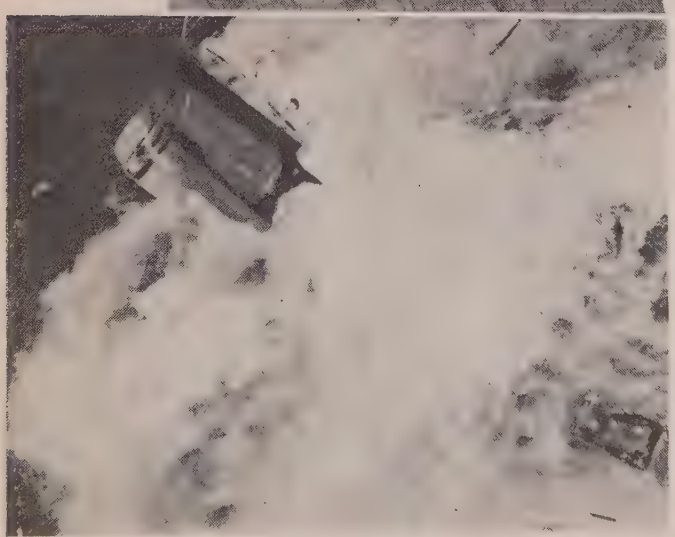


N.Y. *HERALD TRIBUNE* operates one of most luxurious of all newspaper planes. Theirs is a modified Lockheed



AIR SHOT of train derailment *(left)* was made from Philadelphia *Bulletin's* new Beechcraft

STORY-TELLING photo of seven-alarm fire *(above)* also was made from *Bulletin's* ship



news to break, many newspapers also use their planes and pilots for rural news round-ups, visiting local airports for aviation news (the plane's pilot usually doubles as the newspaper's aviation editor), for executive transport work and as a ferry service for reporters going to fairs, sport events, conferences and on almost every type of trip where a reporter can get a story and save time either by aerial return of himself or the story and pictures.

Along the East Coast perhaps the best-publicized news planes have been the ones flown by the New York *Daily News*, largely as a result of many pre-war prize pictures snapped by sky-riding *News* cameramen. For its present operations the *News* uses a Waco biplane out of Flushing, N. Y., airport, and a recently purchased *Mallard*. They are piloted by one of its old operators, William "Buster" Warner. The paper replaces the photographer assigned to the airport on flight-call every few months, the present incumbent being Gordon Rynders who has been with the newspaper for over four years.

According to George Schmidt, the *News* picture desk assignment editor, his photographers prefer the Waco in landplane category because the side cockpit window can be lowered in flight, and the plane's wing design allows complete freedom of vision for aerial camera operation. The present Waco, manufactured in November, 1941, was bought in February, 1946, from the Ohio State Bureau of Aeronautics,

FRONT PAGE STORY in 1939 was sinking of S.S. Lillian. Photo of ship's final plunge was made by N.Y. *Daily News*

WHALE aground on Long Island recently provided another *Daily News* aerial pix scoop

TWO-PLANE fleet belonging to Boise, Idaho *Statesman* is used for its state news gathering

altered at the Waco Aircraft plant in Ohio, and up to last November, when the original engine was replaced with a new one, had logged 350 hours on flights for the *News*. Because the Waco is limited to 500-mile non-stop contact flying, the paper added the amphibian Grumman *Mallard* for night flying and long-range operations.

Several newspapers have solid backgrounds in aviation, both in understanding the industry and in using its products. Back about the time when the young airlines in the country were sure that they were going places with new airmail contracts but weren't sure of their direction, and the airplane industry was buzzing under the impetus of the publicity attending "Slim" Lindbergh's flight to Paris, the Des Moines *Register and Tribune* purchased their first plane.

Delivered May 24, 1928, that plane, a Fairchild five-passenger monoplane, dubbed "Good News" by a newspaper reader, has been succeeded since by seven other types in the line, each in turn receiving the name and a number showing its place in the dynasty. The present "Good News VIII", a two-place 125-horsepower Globe *Swift*, was purchased last summer to fill the gap left when the last previous plane, a Spartan *Executive*, was turned over to the Army Air Forces (in 1942) for use as a personnel transport.

John P. Spaulding, (*Continued on page 50*)

FIRE PHOTOS taken from air, as was this N.Y. *Daily News* pix, give better account than hundreds of words

THE SECOND TEN

Airmen holding pilot's licenses 11 to 21 were a colorful group

By General of the Army H. H. ARNOLD

PEOPLE not members of the flying fraternity get quite a kick out of the barrack-room flying of airmen. Few of the airmen themselves know just how barrack-room flying started. Back when flying was about 75 per cent men and 25 per cent machines, experience in the air was very rare. The best of the old-time pilots in 1912 had under 400 hours total flying time. The instructors could teach the pupils how to manipulate the controls, could teach them how to land and take off, but little more. All of the old timers learned the hard way—by actual experience. If the unusual conditions that these pioneers met in the air or on the ground were not too tough and if the pilot himself was quick to learn, he survived and lived to tell others. But if he was slow on the pick-up, the chances were that St. Peter would be the only one he would ever be able to tell about it.

It was only natural, then, that every airman should take advantage of every opportunity to acquire information from every possible source concerning anything that would increase his knowledge of flying. It was insurance. They discussed those things to save their necks. In later years the airmen rolled out the Tees and set up the wind sock and started the barrack-room flying because it had been so with airmen ever since the first man took off. Orville Wright tells of the many times that he and Wilbur discussed points relative to flying so thoroughly that before they were through, they completely reversed their positions in the argument. Each seemed to have convinced the other.

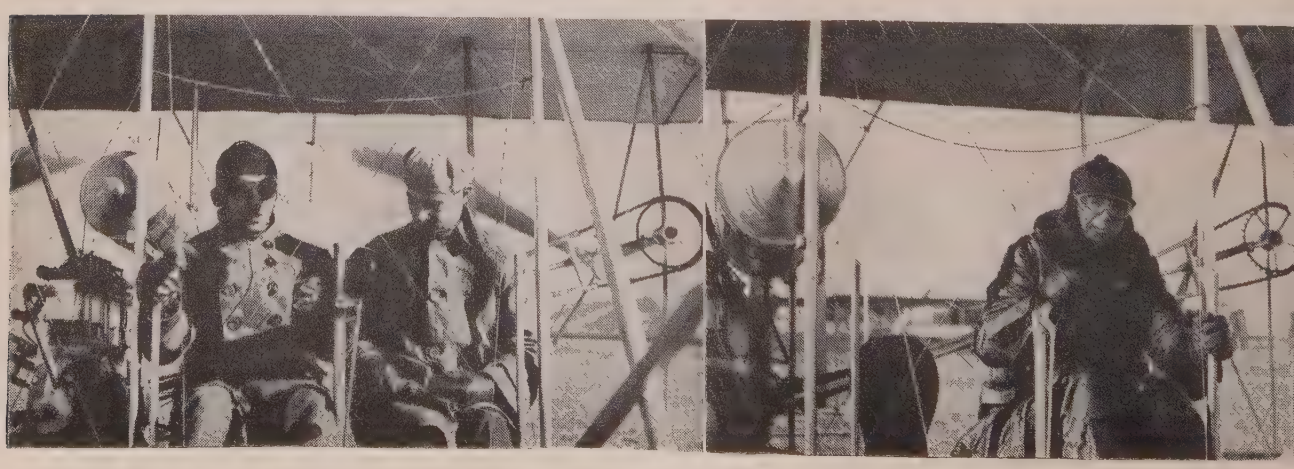
Those hangar discussions brought out many points, such as the advantages of steel or other metal structure over wooden framework for airplanes. There were metal framework planes made as early as 1911, although the mass of planes were made with wood frames in order to save weight. With the low horsepower available, weight was a very important consideration.

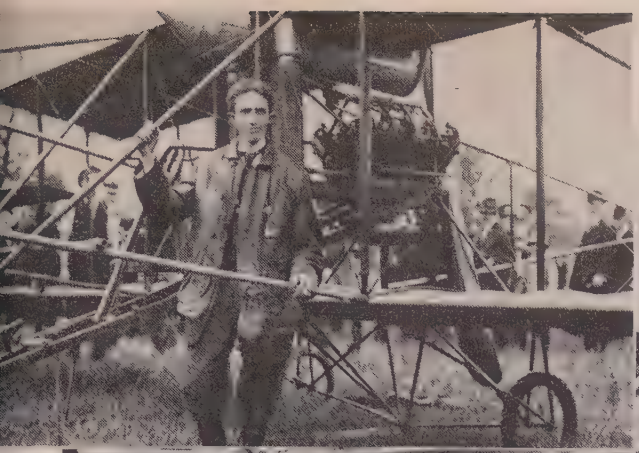
One of the first men to build a metal framework plane was Capt. Tom Baldwin. His chief pilot was J. C. (Bud) Mars, holder of airplane license No. 11, who had joined up with Baldwin in 1910. They formed a barnstorming troupe and visited countries in the far corners of the world. It was indeed a poor aviation meet in the United States that did not have Tom Baldwin's Curtiss-type red planes participating. They were known and advertised as "Red Devils." Bud Mars was not a stunt flyer in the true sense of the word. He gave exhibitions and made good money but did not try to gain a reputation for thrilling flying as so many of those old timers did. He lived through those days, and quit flying in 1912.

License No. 12 was held by one of the most colorful of all those old pilots, Charles K. Hamilton. For quite a time he (*Continued on page 49*)

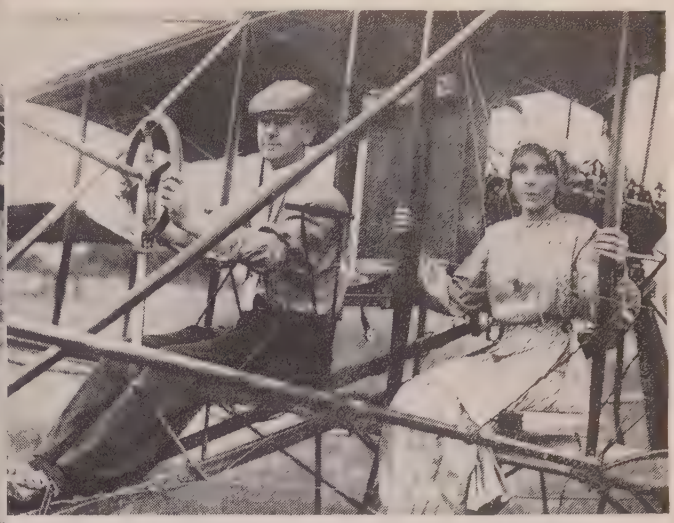
LICENSE #19 went to Walter Brookins, first proponent of safety in aviation. He became old not bold pilot

GENTLEMAN AVIATOR Arch Hoxey held license #21. He was one of first pilots to establish altitude records





CHEATING DEATH often, Charles Hamilton, *left*, license #12, was most colorful of early pilots



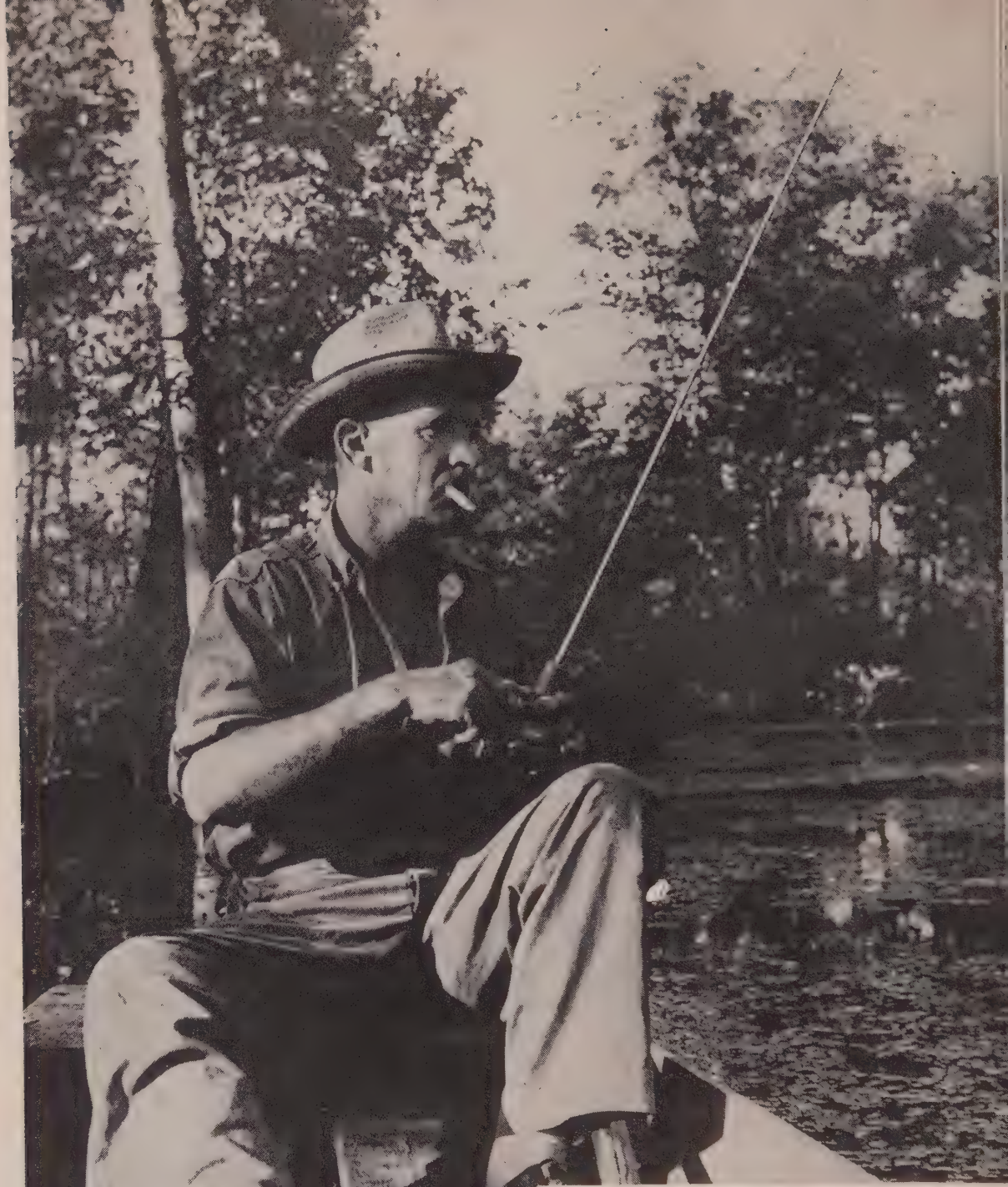
LICENSE #11 was given to J. C. Mars, who quit flying in 1912. *Above*, he takes wife up

LICENSE #13 was held by John Moisant, *above*. Charles Weymann, *below*, license #14, won Gordon Bennett classic in 1911 with speed of 72 mph

"HEAVENLY TWIN" Ralph Johnstone, *above*, held license #21. With Hoxey, he established many altitude records. License awarded to early flyers, before CAA took over job, is shown *below*

FÉDÉRATION AÉRONAUTIQUE
INTERNATIONALE
AERO CLUB OF AMERICA
No. 11.
The above named Club, recognized by the Federation Aeronautique Internationale, as the governing authority for the United States of America, certifies that
J. C. Mars,
born 8th day of March, 1876,
President.
Secretary.
Signature of Licensee
J. C. Mars.

FIRST MAN to land a plane on deck of a ship was Eugene Ely, *left*, who held license #17



GRASSY LAKE angler works a surface plug through the vegetation. And always when the mallards are out of season, they're there en masse

Sporting Thing to Do

By MABRY I. ANDERSON

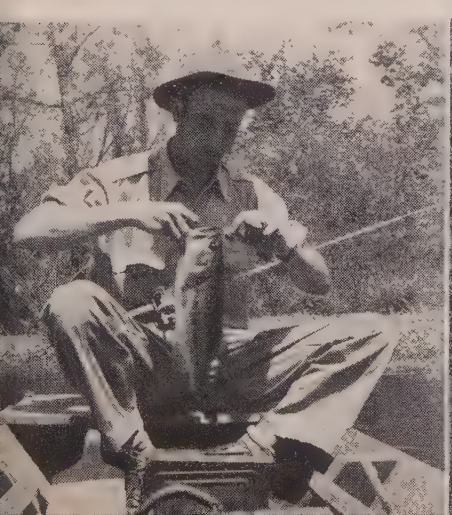
ALL pilots and most fishermen love maps and charts. My being something of *both*, maps and charts hold a two-fold interest for me. I like to spread out a sectional chart and ask myself questions concerning the bodies of water and stretches of swampland that meet my eye. "Are there bass in that little un-named lake?" I ask myself as I spot an intriguing stretch of water. "Do ducks frequent that marsh?" I query as I investigate swampland, marked by those interesting little tufts of grass. And, "can I land my plane nearby?"

FISHERMEN inspect their tackle before they take off for field near Grassy

Of particular interest to me is the extreme Northeast corner of the Shreveport, La. Sectional Chart for there, lying approximately 15 miles southwest of Charleston, Miss., lies Grassy Lake. On the chart it appears small and nondescript but when you've explored its wild, confusing acres for as many years as I have, you realize how little a map or chart can actually tell. As a matter of fact, maps leave Grassy un-named but by searching closely for the little hamlet of Tippo, Miss., you will find it lying westward approximately two miles. Men are prone to fall in love with a remarkable assortment of things; women, airplanes, bird dogs and corn likker, all having their staunch devotees. But as for me, I fell in love with Grassy Lake many, many years ago. With the possible exception of the Florida Everglades, Grassy Lake is unique. From its gin-clear waters, thousands of gnarled twisted old cypress writhe their gaunt arms sky-ward and, to break the monotony, tupelo gum, elbow bushes, yonkapins, and water lilies exist in wild confusion. Bass are there in countless numbers and with the coming of Autumn, myriad wildfowl haunt its eerie vastness. Distance and the press of business keep me away from Grassy much too much but when Autumn comes, I always return, picking up the threads of my boyhood while drifting along its countless waterways.

Two miles west of Charleston, Miss., my good friends Frank and Gene Sayle operate a private airport of adequate size. True, Civil Aeronautics Administration maintains an excellent field some six miles south of town, clearly marked on the Shreveport chart, but I like to patronize old friends. Then too, perhaps I'm selfish because no matter how busy the boys happen to be, they always can find time to discuss fishing and usually can be counted on for the loan of a vehicle to cover the last few miles to Grassy. Unfortunately, Grassy Lake is too well timbered for seaplane operation, but since I prefer to pick up a dusky boat paddler I know in Charleston, this is really no disadvantage. The airplane plays its (*Continued on page 51*)

BASS weighing four pounds was worth an air trip to this fishing area



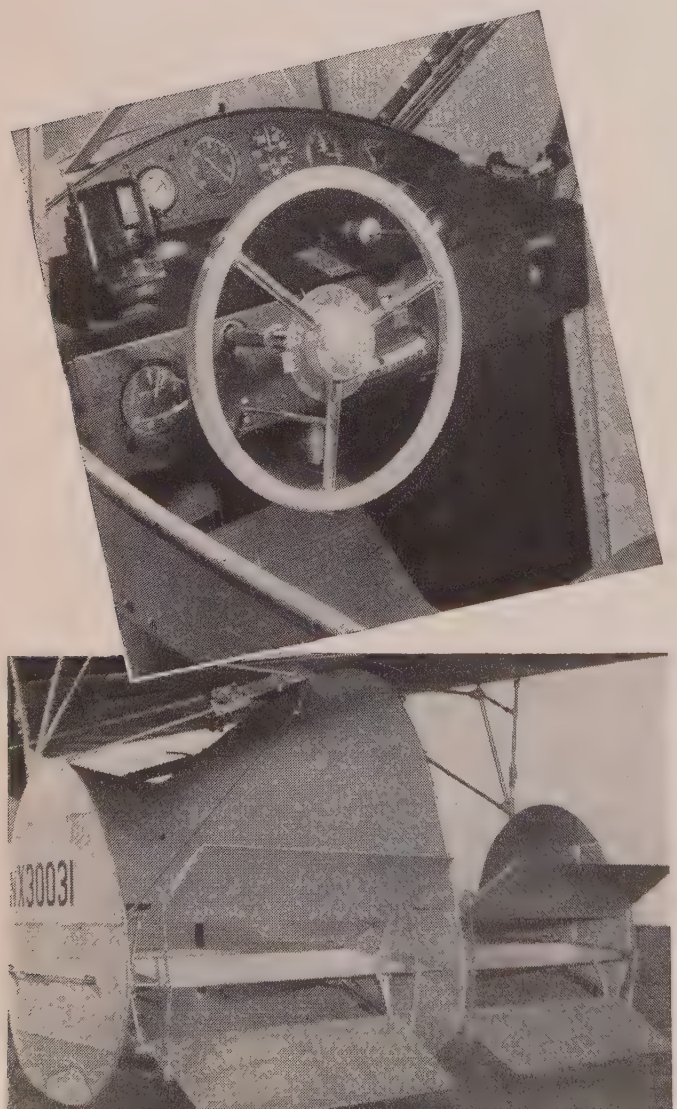
SURFACE PLUG brought three bass in within a few minutes

AUTHOR reels in another bass while his father takes a turn at paddling

By VICTOR BOESEN

Fly It or Drive It

At home on the highway or skyway, Planemobile enters aircraft field



ONE of the latest offerings in the field of private aircraft which can get around on the ground as well as in the air, solving the utility limiting estrangement between the conventional ship and owner inherent in their separate addresses, is the *Planemobile,* developed by D. R. Zuck and S. D. Whitaker, aircraft engineers, of Los Angeles.

The main difference in the *Planemobile* is that it retains its wings during ground travel, carrying them neatly folded back, one atop the other, over the fuselage, a principle prevalent among the winged things of nature. As nearly as I can determine, no other designer can make that statement.

Other roadable planes check their wings at the flying field before they drive off. There is one, more auto than airplane, which leaves everything behind but the cockpit section . . . tail group as well as wings, escaping from these appendages after the fashion of a crisis-ridden salamander abandoning its after end.

The *Planemobile* also is distinguished for a floating, or pivotal, wing, and for air brakes located back in the position usually occupied by the eleva-

ROADABLE *Planemobile*'s instrument panel offers interesting arrangement. Note angle-of-pitch indicator mounted on right side of panel near windshield. The yawning airbrakes *(left)* allow a steep angle of glide

DESIGNERS Stanley D. Whitaker, pulling prop through, and Daniel Zuck, in cockpit, ran *Planemobile's* taxi tests on Rosamond Dry Lake. Folding ship's wings back for ground travel *(right)* is easy job for two people

tors. Both of these features are said to be unique.

A floating wing, as the term indicates, is a wing which is free to change its angle of attack, or forward edge, up or down, according to the vagaries of the air currents. Zuck and Whitaker believe this will make for smoother riding in rough air. The wing, which is trimmed in mounting to hold a predetermined angle of attack in average conditions, rocks on an axis which extends from the fuselage to the strut support midway out.

Floating wings have been tried before, but always directly tied in with the control stick. This called for a pilot with the strength of a medium Charles Atlas. The *Planemobile's* wing is controlled through a device on the trailing edge which its designers call an "ailerator" . . . because it is neither aileron nor elevator, but both.

With a changeable-pitch wing, and ailerators to do the changing, there is no need for the usual elevator in the tail. When the pilot wants to go up or down, he simply pitches his wings in the direction he wants to go. To make a turn he cuts one wing down and the other up.

This is why it was possible to put the air brakes out in the spot normally given to the elevators. Placed in exactly the same position as the elevators, one on either side of *(Continued on page 56)*

FAMILY GARAGE or small patio provides easy parking for this two-place highway-skyway plane. In the air the *Planemobile*, with 40-hp engine, cruises at about 80 mph. Present engine may be replaced with a 75-hp

Tie Down for Keeps

Wise is the plane owner who knows hou

to tie-down his airplane . . . and does it

By DONALD CHASE

PLANES parked downwind of trees, etc., like this Stearman and PT-19, are less apt to be damaged by high winds

THE smart pilot heads for home when the weathe gets too turbulent to be fun. Yet, following tha sigh of relief after landing, our fine flying frienc isn't completely out of trouble. Unless a hangar i available, Joe Pilot is in for a headache in tying down his lightweight flying machine. And if tha landing is made away from an improved airport the rough part of his flying has just begun.

Tying down a plane in the open is easy, but i does take a little time and effort. No airplane flying cross-country should ever take off without a service able tie-down kit. Rotted clothes-line twine is use less for snubbing down a plane. New, heavy-duty rope, and plenty of it, should be kept in the bottom of all baggage compartments. A small spade and a pocket knife will make the job easier, but start ing from there, the pilot must improvise and take advantage of available material.

Some experienced pilots prefer to park their planes tail into the wind so that the higher the wind, the closer the plane will stick to the ground This procedure is fine—up to a point, that is. Should the wind increase to gale proportions, the plane's wing and tail struts may buckle from the over stress pressure beating down on top of the wings

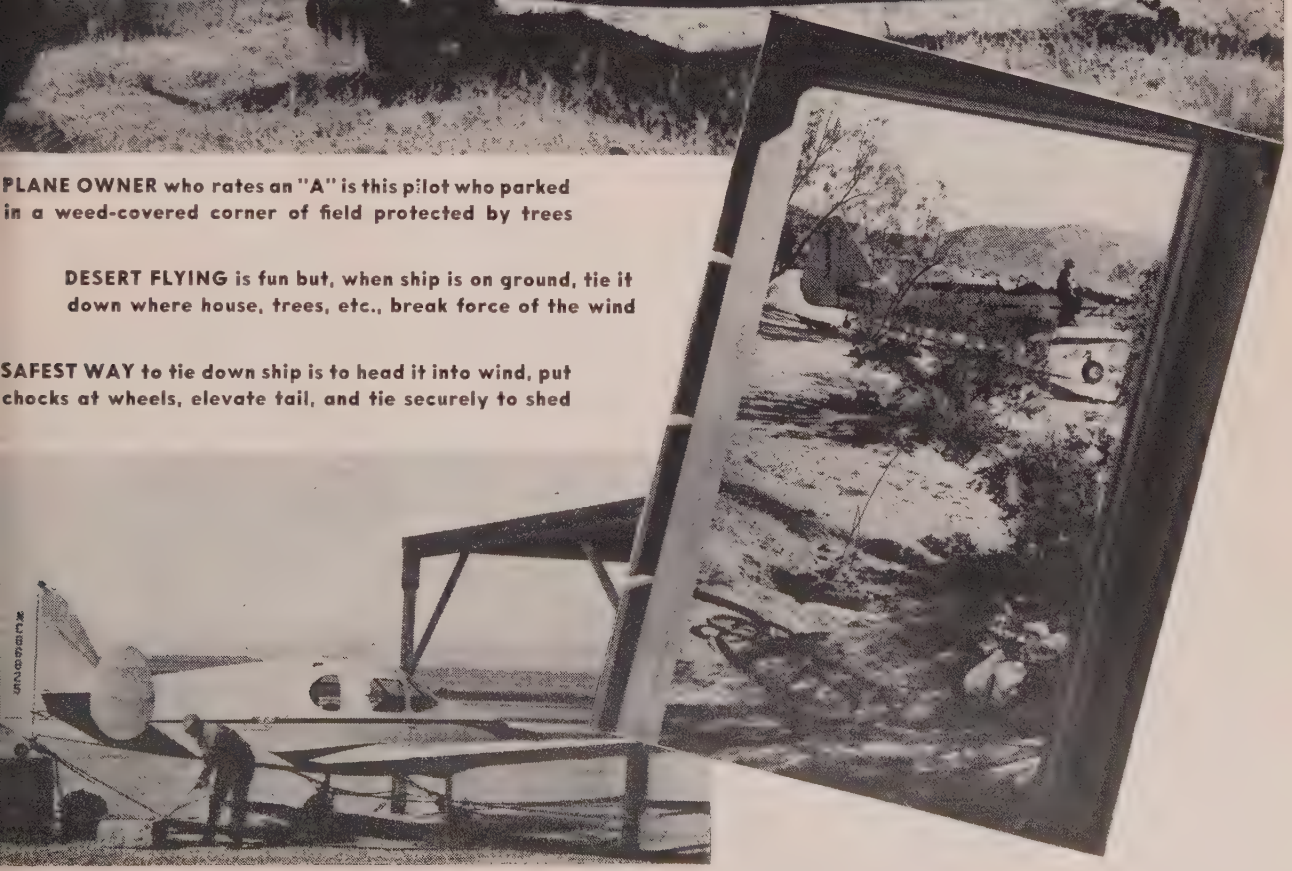
TIE-DOWN KIT, hinged-type that was furnished in surplus plane, was not strong enough to hold down this Stearman

HIGH WINDS, about 60 mph, wrecked these planes in California. Weak tie-downs pulled free, ships blew over

PLANE OWNER who rates an "A" is this pilot who parked in a weed-covered corner of field protected by trees

DESERT FLYING is fun but, when ship is on ground, tie it down where house, trees, etc., break force of the wind

SAFEST WAY to tie down ship is to head it into wind, put chocks at wheels, elevate tail, and tie securely to shed



OVER-NIGHT STOP calls for tie-down. Rope on this Aeronca, parked in pasture, should have been tied at strut-

If solid anchors are available (fence posts, buildings, parked automobiles or trees), any plane can be prevented from blowing away by chocking the wheels and tying enough rope to these heavy objects. If the plane is parked heading into the wind, a platform should be built to raise the tail into at least level-flight attitude. Then the harder the wind blows, the more tendency for the plane to float lightly on its landing gear without placing any strain on the aircraft. Oil drums, saw horses or piled wooden boxes make ideal tailblocks. The tail should be tied from both sides so that it will not blow off the support should the wind change direction. Shallow holes dug in the ground to sink the landing gear will make the plane sit in nearer level-flight attitude and make it possible to use a lower tailblock. It also helps brace the plane.

Wing-tip hand-holds make poor anchors on planes. The wing-tip is designed so that it will before the wing itself, and many planes have away in high winds by merely pulling the hold out of the wing-tip. Ropes should be att to regular tie-down rings, wing struts at thei fittings only, or landing gear fittings. Ropes to the middle of a wing strut will buckle the if severe pressures are applied. The metal, type tie-down kits furnished with many su aircraft are nearly useless in soft, sandy gr since they will pull free with the slightest pre

On any over-night stop, whether at an airpo in deserted wilderness, it is a money-saving to tie-down the airplane. So it hasn't blown for 20 years? So maybe it'll blow tonight. don't forget . . . repair bills come high!

TIE-DOWNS consist of ropes attached to cement "dead-men" buried in ground. Slack rope will tighten when wet

PILOTS at Baker, California, tie their planes to " men" that are made of 100-pound sacks filled with

PYLON PILOTS

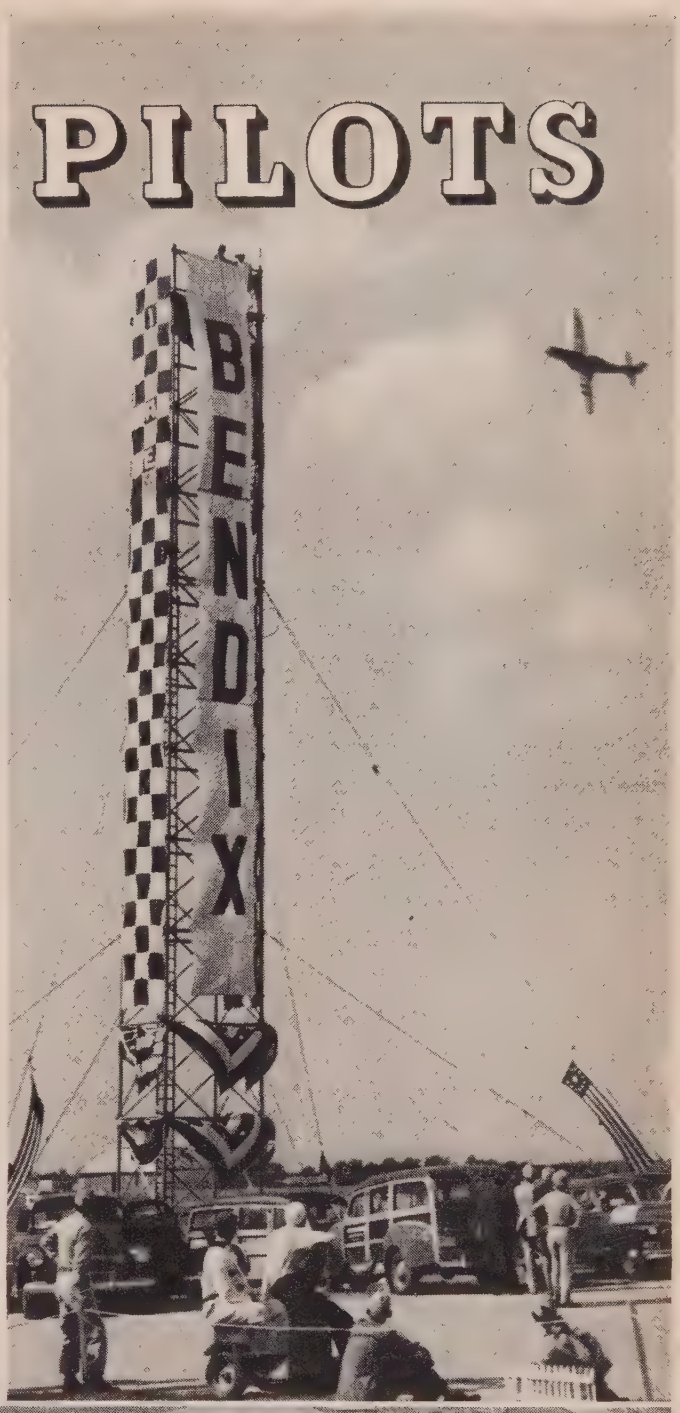
By AL BACHMANN

IN September of 1930, Speed Holman flew his open-cockpit biplane, a Laird *Solution*, at a speed of 201 mph to capture 1st place in the National Air Races' Thompson Trophy race. In 1946, Alvin Johnston in a P-39 *Airacobra* took the Number 1 prize in the Thompson race by flying the 300-mile closed course at a speed of almost 400 mph, 373.908 mph to be exact. But in between that speed difference of some 172 mph there lies more than just time and the progressive improvements in airplanes. That gap in speed and time represents the coming of age of aviation.

Back in the 1930's, daredevil flyers risked their lives . . . and some lost . . . flying the small homemade planes they'd built. Many of the ships that flew the early air races didn't last very long, eventually crashing and ending up in some junk yard. A few, however, were studied by plane manufacturers and later became prototypes of some of today's planes.

As September rolls around and another session of the National Air Races appears on the calendar, let's take a look at those airplanes that set the first speed records, at the men who flew them, and who pioneered today's aviation.

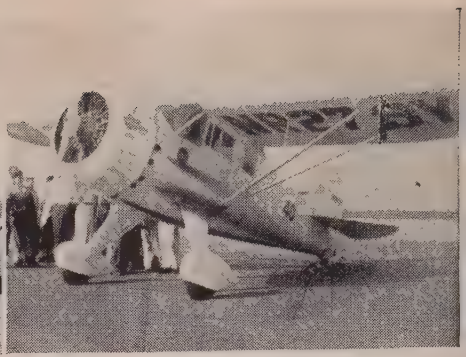
The Monocoupe airplanes, which developed into



NATIONAL AIR RACES, begun back in 1930, were resumed in Cleveland last summer after a six-year absence. The 1946 racers were souped-up military ships instead of homemade jobs that shattered records during the 30's. And a new race had been added . . . jet

FAST racer in early 30's was J. Livingston's "clipped" Monocoupe

"IKE" was second of Benny Howard's line of DGA planes that set records



DGA-5, called "Mister Mulligan," won Thompson, Bendix races in '35

BENDIX winner in 1931 was Doolittle flying a Laird *Solution*

TURNER, in Laird *Meteor*, won Thompson for 2nd and 3rd times in '38, '39

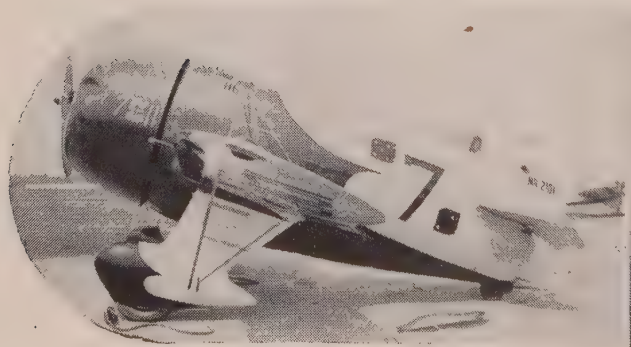
GEE-BEE 4, with Lowell Bayles at the controls, won Thompson in '31

very fast racers, were flown by Johnnie Livingston in the early 1930's. He began each year by clipping a few inches off the wings of his ship, and in the late 1930's had one of the fastest and trickiest in the field of lightplanes. His ship reached speeds way beyond the dreams of its manufacturers and the records that Johnnie established with this small, tricky job proved that its place was made in the future of flying. Johnnie Livingston is now a quiet, conservative aviation company executive, perhaps a rather dull life for a man who used to speed around a race course at better than 200 mph.

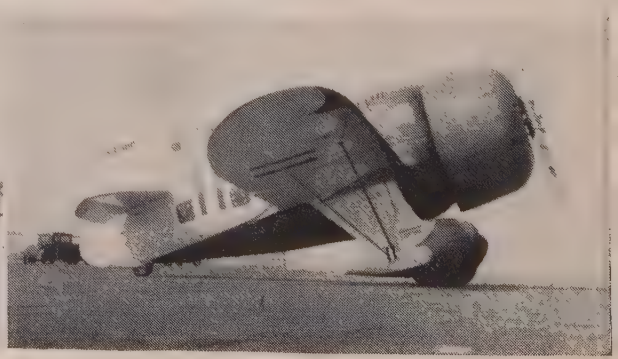
Benny Howard, also of the "old school," came out in the early 1930's with the first of his great line of racers. Ben's first was the Howard DGA-1. When asked what the "DGA" on his ship stood for, Benny grinned the well-known Howard grin and replied, "It means Damn Good Airplane, of course!"

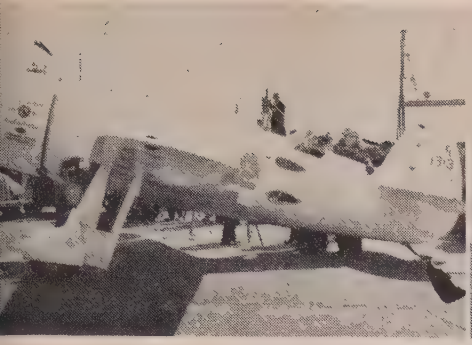
Pete, as Benny's first job was called, lived up to his words. With Benny at the controls it ran away with more races than any other light ship in the racing field at that time. But Benny didn't let that ship alone bring him fame. He came up with two fast additions to his airplane family. These were *Ike* and *Mike*. Whenever they were entered in an event, the prize money was invariably theirs. Later, Benny developed a big brother to his already famous family . . . it was *Mr. Mulligan*. This sleek monoplane, with plenty of speed under its wings, was DGA-5. *Mr. Mulligan* won the Greve, the Thompson and the Bendix trophy races, all in the

GEE-BEE 7 and its sister ship, Gee-Bee 11, called "Flying Barrels," set speed records



GEE-BEE 11, with well-known speed flyer Jimmy Doolittle at controls, won Thompson Trophy in '32

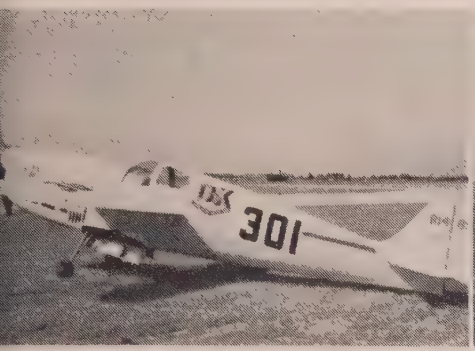




HM-1 RACER, built and flown by Frank Hawks, won many races

GM-1, offspring of Gee-Bee's was flown by Jackie Cochran, Australia to London, in '38

R-6H, another Gee-Bee, set Mexico to N Y record



FK-1, homemade Folkerts flown by Rudy Kling, won Thompson in 1937

KEITH-RIDER placed 5th in Thompson race in 1934; 3rd in '35, and 2nd in 1936, '37, '38

JEEP, built and flown by Chester, won Greve '39

three days of the National Air Races back in 1935.

Laird airplanes were used to carry airmail in the Middle West, but Charles "Speed" Holman really made them famous with his Laird *Solution*. It was "Speed" who won the first Thompson Trophy race in 1930, flying his Laird to a speed of over 200 mph. Dale Jackson, of the endurance team of Jackson and O'Brine (they stayed aloft for 17 days) flew it to 3rd place in the Thompson in 1931. Jimmy Doolittle won 1st place in the Bendix in 1931 in the same ship.

The Turner-Laird *Meteor* was built in 1936 for Roscoe Turner. He entered it in the 1937 Nationals at Cleveland. Roscoe placed 3rd in that year's Thompson Trophy. He was back the following year, however, and won the race without a struggle.

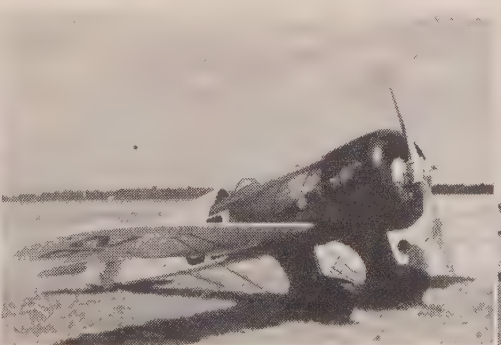
Flying at a speed well over 280 mph, Roscoe Turner won the hearts of all the air-race fans and really did a beautiful job of flying the tricky *Meteor*. Roscoe often tells about the trip up to the races that year from down in the Southwest. He'd had to fly through hail and dust for what seemed like hours, and every second of the flight he'd prayed the covering on his wings would stand up under that beating. I saw the ship when he came in at Cleveland's Municipal Airport, and it looked as if a mischievous child had taken a hammer and pounded the metal leading edges of the ship's wings. That shows what hail can do to an airplane.

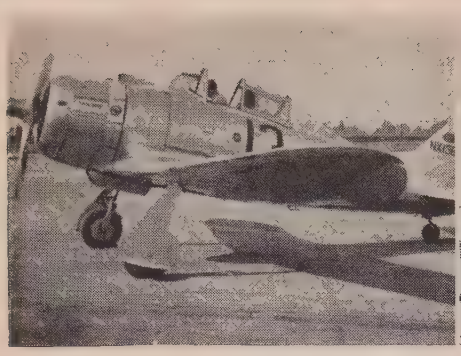
The Granville brothers, of Springfield, Massachusetts, also contributed much to the field of racing and to the future of aviation. One of their famous

GOON, a larger Chester version of Jeep, also came on to win air races

COMET, a Wedell-Williams racer, won 1st in Bendix in '32, '33, '34; won Thompson '33

SPECIAL, also Wedell-Wm's, won the Thompson





SEVERSKY won Bendix '37 and 1939 (Fuller), '38 (Cochran)

BELLANCA, piloted by Alex Papana, crashed before it made racing news

THOMPSON 3rd-placer in 1938 was Steve Whitman in homemade "Chief"

line was the Gee-Bee-4, flown by Lowell Bayles in the early part of 1931. He flew it from Springfield to Buffalo, N. Y., in 1 hour 32 minutes, averaging slightly faster than 300 mph. That same year, Lowell entered it in the Thompson at Cleveland and, flying at a speed of 236 mph, he won over a large group of experienced racing pilots. That same year, Bayles flew the Gee-Bee-4 across the field in a fog at Buffalo airport. He was testing a new one-piece prop and in buzzing that field he hit a speed of over 345 mph! Bad luck dropped in on Bayles, though, at the Wayne county airport in Michigan late in 1931 when he was trying to break the world's speed record over a mile course. The ship crashed when a control cable broke as he was pulling out of a dive, and aviation lost one of its most widely watched pilots.

Granville built again and again though, coming out with Gee-Bee-7, and then with its twin number Gee-Bee-11. They were called the "Flying Barrels." With Russell Boardman at the controls (he flew non-stop from New York to Turkey), Number 7 made many new speed records, but it crashed on the take-off at Indianapolis during a speed dash across the country. Number 11, flown by Jimmy Doolittle, won the Thompson race in 1932 with a speed over 252 mph. The following year, it came to a sudden end at Burbank during the take-off in the Bendix race, with Cecil Allen at the controls, ending the "Flying Barrels" brief career. Then Granville came out with another. This time Jacqueline Cochran flew it from London to Australia in time to put the *Gee-Bee's* in the limelight again. That same year of 1938, Leigh Wade, of round-the-world fame, flew one of the new *Gee-Bee's* at Cleveland in the Thompson, but developed trouble and finished in 4th place. Later, another merchant of speed, Frank Hawks, built it to his fancy and flew it around the country to many new laurels. A Mexican, Sarabia, bought one of the Granville products and flew it from Mexico City to New York in record time, but while on a good-will visit in Washington, he crashed into the Potomac river. Thus another Granville racer came to an ill ending, but again after a brilliant career.

Rudy Kling, a little-known pilot from Lemont, Illinois, flew to fame and fortune in the 1937 Thompson race by winning it in his homemade Folkerts, "Pride of Lemont," at a speed of 256 mph. Later, the same ship brought death to Rudy at Miami during the All-American Maneuvers when he flew into the ground after he was caught in a down draft as he rounded a pylon.

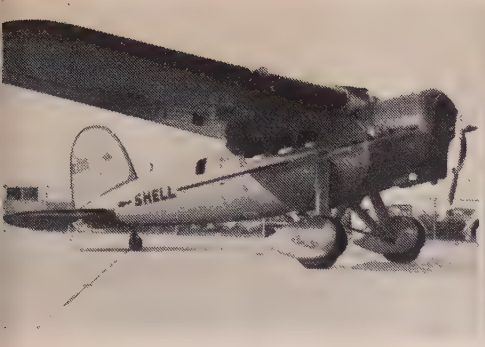
The Keith-Rider planes also were well-known at all air meets. A Keith-Rider ship, flown by Roger Don Rae, took 5th place in the Thompson in 1934 and 3rd in 1935 and then, flown by Earl Ortman, it landed 2nd place in 1936, 1937 and 1938.

Art Chester built his small Chester *Jeep* and placed 2nd in 1938 Greve, finally coming up to win it in the 1939 meet at a speed of 263 mph. His other addition to the Chester threats was the Chester

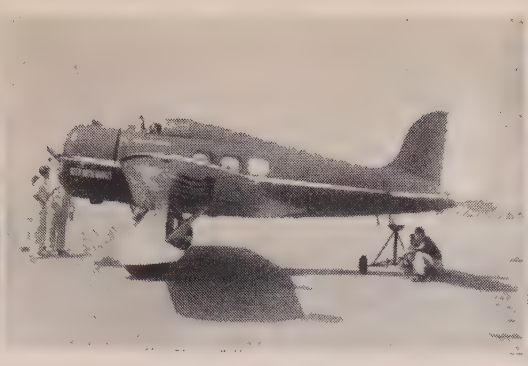
BROWN SPECIAL, flown by Roy Minor, placed 2nd in 1936 Thompson

MR. SMOOTHIE, a Pearson-Williams design, was dogged by trouble

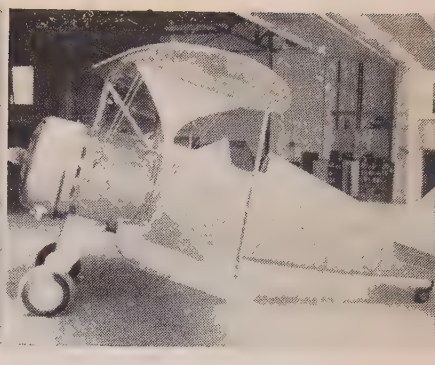
NO. 13, Beechcraft flown by Cochran, placed 3rd Bendix '37



LOCKHEEDS were always part of races. This was flown by Doolittle



FLYER Paul Mantz flew this Lockheed ship in several races. It was named for movie



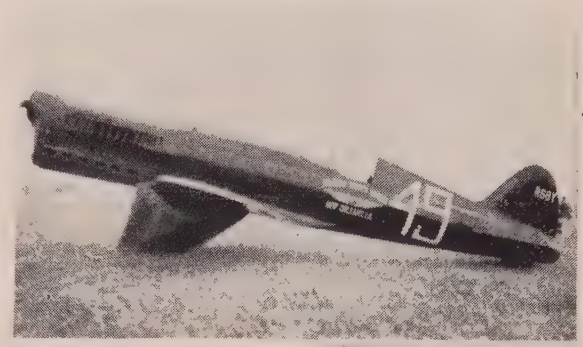
HUNT SPECIAL was a popular stunting plane

Goon, a larger version of his *Jeep*. Chester won many plaudits from the fans with his breath-taking pylon turns.

Jimmy Wedell, an old-timer to the racing game, entered speed dashes in the early 1930's and won 2nd place in the Thompson in 1931. Two other of his Wedell-Williams racing models won 2nd and 3rd and 4th places with Wedell, Turner, and then Jimmy Haizlip at the controls. In 1933, Wedell won the Thompson at a speed of 237 mph, and his two other ships also came in in the money. In 1932, his ships won the first three places in the Bendix, and in 1933, they placed 1st and 2nd again. In 1934, it was again Wedell's ships that won 1st and 2nd places in the Bendix. His ships are well remembered at all the meets throughout the country.

Alexander Seversky brought into aviation one of the world's best-known planes, the Seversky *Racer*. It later was developed into Republic Aviation's P-47, the *Thunderbolt* fighter of World War II. Back in 1931, at the Buffalo Airport, Alex flew in from the races in Cleveland, with a small wooden model of his conception of a dream ship. Alex built that dream ship, and it did make world history. His different racing models have been flown by many trophy winners, Jackie Cochran, Frank Fuller, Frank Sinclair and Jimmy Doolittle.

Bellanca developed several record-making ships, mostly ocean-hopping cabin planes. They were flown by Chamberlin, Williams, Pangborn-Herndon, Boardman, Sabelli and many others to distance



DELGADO Trade School entered *Flash* in Greve's

RACER seen in early '30's was Marcoux-Bromberg

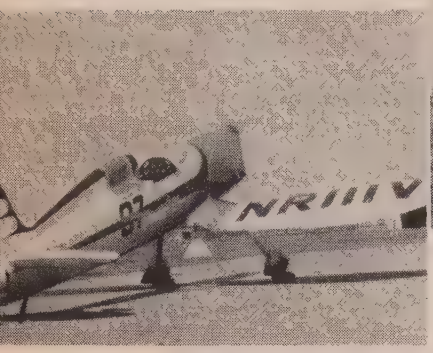
PILOT Whittenbeck flew a Hardwick-Whittenbeck

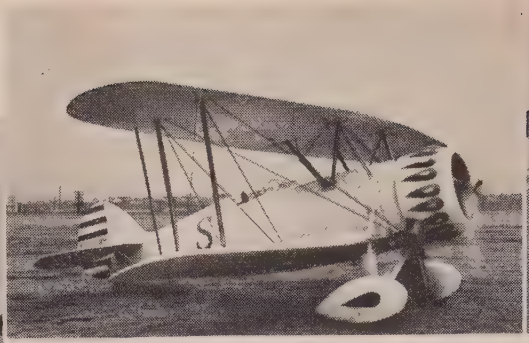
GREVE RACES for several years saw Owen Tilbury and his *Flash* as entry

HUGHES SPECIAL, designed and flown by Howard Hughes, was entered in many XC's

MYSTERY SHIP was Hawks *Travelaire* racer

ISREAL called his gull-wing racer "Redhead." It hit 250 mph

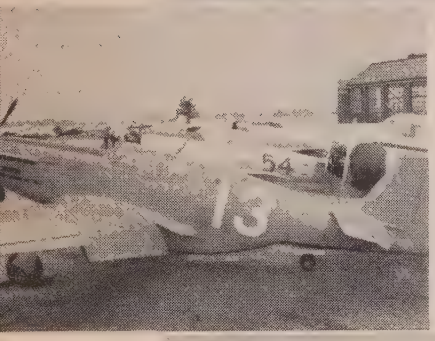




STUNT FLYER Joe Mackey startled air race fans with his inverted flight in a Waco

FAMILIAR sight was Johnson's 10-ton Ford Tri-motor which he stunted

1946 Bendix winner was a Mantz-flown *Mustang*



BENDIX 2nd-placer was a P-51 flown by Cochran

IN-MONEY 7th-placer in Bendix was Tucker's P-63

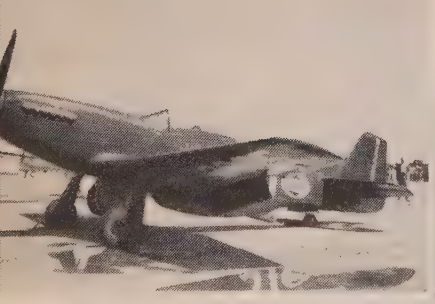
records, but their entry into racing came in 1939 when they developed a three-engine job flown by Alex Papana of Rumania. It developed trouble, though, so it never did break into the racing game. However, Bellanca built a single-engine ship called the *Flash*. It was flown across the Atlantic by Jim Mollison, and served with the French for awhile.

The Brown *Specials* were another well-known brand at all air meets. The Brown B-2 made many hearts skip a beat with its tricky flying and speedy take-offs. Roy Minor flew it to 2nd place in the 1936 Thompson race. Lee Williams, a giant alongside these small Browns, crashed shortly after his take-off during the Greve race in 1939. He was flying Marion McKeen's *Miss Los Angeles*. Williams was co-designer of the Pearson-Williams *Mr. Smoothie* which was never entered in any of the large races due to engine trouble. McKeen won many races though, and established many speed records in his Brown racer.

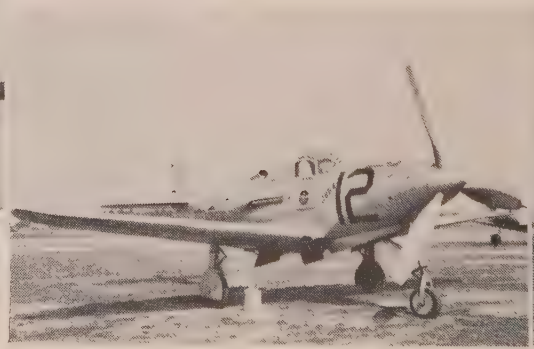
Steve Whitman, the "Flying school teacher," flew his homemade jobs, the *Chief* and *Oskosh Warrior*, in many speed dashes, placing 2nd in '35, 5th in the '37 and 3rd in the '36 Thompsons.

Beechcraft played a large part in the races with their staggered-wing jobs. Louise Thaden, first woman to win the Bendix, flew her ship at an average speed of 166 mph. Max Constant flew his to a speed of 231 mph in 1939, coming in 4th in the Bendix. In 1937 Jackie Cochran flew hers to 3rd place in the Bendix at a speed of 194 mph, and

AIRACOBRA flown by C. W. Bing was a money winner also in the Nat'l's '46 Sohio



WEATHERHEAD race for jets was won by Lt. Reilly in P-80. He hit 578

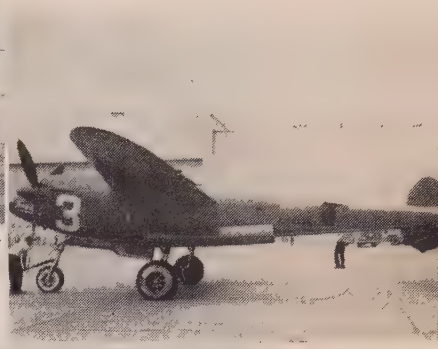


SOHIO race in '46 was won by Dale Fulton in another P-51

THOMPSON for jet in '46 was won by Maj. Lundquist in P-80 at 515 mph

THOMPSON for "R" ships in '46 was won by Johnston in Bell P-39. Speed was 373 mph

LIGHTNING flown by Le Vier placed 2nd. Speed was 370.1 mph



then came back the following year to win the Bendix with a speed of 249 mph.

Lockheeds, too, were always a part of the races. They were flown by Amelia Earhart, Ira Eaker, Art Goebel, Jim Hall, Roy Hunt, Paul Mantz, and Milo Burcham. Even as far back as 1930 Bob Cantwell flew one at 140 mph to win a cross-country dash sponsored by Ford. Lockheed built the ships which carried Wiley Post and Harold Gatty around the world in eight days. Lockheed built the ships for Howard Hughes, Jim Mattern, Frank Hawks, Hubert Wilkins, Dick Merrill, and Charles Lindbergh, ships that carried all these to fame.

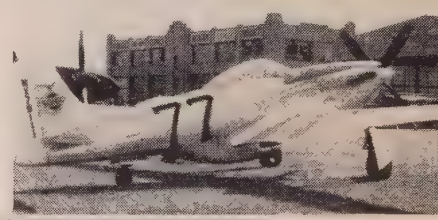
A lot of the lesser known to the general public but equally famous to the air-race enthusiasts risked their necks for fame and fortune and contributed much to aviation, Roy Hunt was one of these men. He flew his Hunt Special, a Great Lakes trainer called *Miss Butterfingers* which he handled as well upside down as he did right side up.

The Delgado Trade School of Louisiana had an entry at most of the meets. Marcoux-Bromberg's *Gilmore Record Breaker*, flown by Earl Ortman, often was seen too. It was flown to many record flights by Earl in the late 1930's. The Hardwick-Whittenbeck *Special* was flown by pilot-designer Clem Whittenbeck, a pilot with a wooden leg. The Tilbury *Flash* was flown in many of the races by Owen Tilbury. Then there was Howard Hughes with his *Hughes Special.*

The *Travelaires* were (*Continued on page 58*)

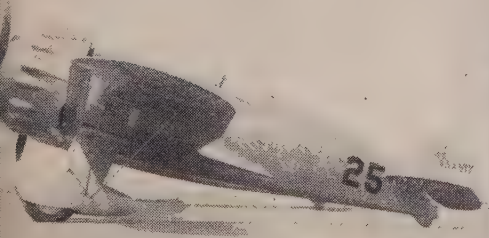
MUSTANG flown by Ortman placed 3rd, Thompson

RAYMOND'S P-51 was 4th in the 1946 Thompson



SCHOENFELDT, flown by Le Vier, won Greve in '38

WEDELL-LAIRD *Comet* took 5th place in the 1938 Thompson Trophy



CROSBY CR-4, built and flown by Harry Crosby, placed 5th in 1939 Thompson race

HALLE RACE for women in '46 went to Marg Hurlburt, AT-6

FULL STALL landing offers slow landing speed, short ground roll. This makes it the best choice for a dead-stick

WHEEL landing calls for flying your ship right onto the runway. High winds and turbulent air call for this type

Full Stall & Wheel Landings

There are three ways to land your plane . . . specific conditions dictate one you use

By LIB and WIL BIGLER

HOW many times has a solo student watched with wistful admiration while some homecoming cross-country pilot breezes into the traffic pattern, wheels his craft around the final turn, and greases it in on the wheels? It looks good, and it's a perfect landing when the windsock is stiffly horizontal or whipping about in a gusty breeze; but when the air is smooth and the wind light, it's just poor judgment—an easy way to run out of airport.

During the last pre-solo hours it may seem to a novice that getting the plane on the ground intact is all one could ask. In a measure, that's true. but there's an easy way to do it; a different way tailored for each combination of circumstances. Not only wind and turbulence, but visibility and ground conditions determine the best kind of landing to make.

Three main types of landings, with a few minor variations, will equip a pilot for any normal situation, if he knows when as well as how to use these types.

The *three-point stalled landing* most pilots struggle to learn may not always suit the occasion, but it's probably used more often than any other. If the field is of comfortable length with surfaced or solid turf runways; if the wind is light (15 mph or lower) and within 20° of the runway; if the air is moderately smooth and the visibility good, this is the landing to use. It has the special advantages of a slow landing speed followed by a short roll. These characteristics make the three-point stall landing the best as well as the only choice for a dead-stick landing.

It might be said here that a good landing begins in the traffic pattern, and that a traffic pattern is the product of the relationship among altitude, time flown on the legs, use of the throttle, wind conditions, and attitude of the plane. Once the pilot has decided what kind of landing he wants to make, he must manipulate these factors so as to produce the type of approach best adapted to that landing.

Basically, most traffic patterns are flown around a rectangular course, utilizing either the 90° or the 180° side approach. After checking the direction and estimating the velocity of the wind, we fly downwind parallel to the landing runway. At a point opposite the intended landing spot on the runway, we close the throttle and establish a normal glide. Taking into account distance, altitude and wind, we make a turn onto the base leg at a point somewhere beyond the boundary of the field (CAA recommends a final approach of at least 1000 feet) from which a normal glide will carry the plane around the remainder of the pattern and to the "spot."

From our key position (just after the turn onto the base leg) we plan the rest of the approach. After this point it is particularly important to maintain a constant glide. We recheck our previous estimate of wind velocity, correct for drift as necessary and check altitude in relation to the distance yet to be glided. Final adjustments can be made in most cases by varying the degree of bank or the timing of the final turn. If we are too low at the key position we may immediately start a shallow turn toward the runway. The steeper the bank in the turn, the greater the loss of altitude; by using the shallow turn we shall probably be able to reach our spot without using power. On the other hand, if we have too much altitude at the key position, we will fly the full length of the base leg and make a steeper turn onto the final approach.

With the plane headed (*Continued on page 60*)

From Sails to Seaplane

By JEFF LYON

EBEN ROBISON, for many years a well-known yachtsman along the East Coast, has bought himself a new vessel. That, in itself, is not news . . . until it becomes known that this latest addition to his fleet has wings. Coupled with the fact that Robison waited until he was 60 to buy a seaplane and learn to fly it, it's a story to prove that a man is never too old to learn something new.

Robison's belated sprouting of wings indicates he's no Rip van Winkle, although he's spent the major portion of his life in Westchester County, hard by the Hudson River Valley's famed Sleepy Hollow. He's built up a comfortable living there, and now he figures his plane will help him see the few things he's missed in a colorful six decades.

Of course, there are a lot of private pilots around nowadays who have learned stick-and-rudder technique at 60, or even later. But Robison is one of the first of these oldsters to combine it with water handling experience to win the status of seaplane pilot. Although it makes him something of a rarity, it's as natural as eight bells and all's well to him.

Robison avers that he was born and raised in a seafaring town, and he's gone down to the sea in a variety of ships ever since he was big enough to port his helm. He chuckles when he recalls the first craft he ever owned back in 1905, a twin-sailed canoe big enough to take two adventuresome crewmen. "We got wet and nearly drowned more times than I can remember," he says, "but it taught us how to sail. Matter of fact, it was a case of sail or tip over . . . so we became good sailors."

In the years since he outgrew his sailing canoe, Robison has owned and sailed the slickest of tall ships . . . and the squarest, squattest of seagoing tugs. It was with a vessel of the latter classification that he had the most fun.

That was a 42-foot deep-sea trawler which would make no better than nine knots under full power. Robison liked the boat's sturdy hull and the business-like lines, so he uprooted masts and booms and made a pleasure craft out of her. When the war came along, the Coast Guard tapped her for coastal security patrol and Robison went along as skipper, with the rank of chief boatswain's mate.

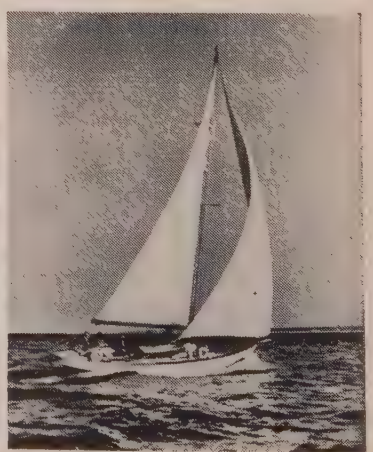
Robison and his thousands of volunteer compatriots in the Coast Guard Reserve (Temporary) did a great job for the Navy during the war. So did their opposite numbers in the Civil Air Patrol. The similarity gave Robison an idea. The thought of flying fired his imagination, and the more he thought about it, the more he determined he'd fly.

When war's end mustered Robison and his boat out of the service, he broached the idea to his wife. But flying didn't ring the bell with her. She thought it was strictly a game for the youngsters. After 34 years of marriage, however, the Robisons have come to understand each other pretty well and she went

FIRST CRAFT Robison owned was this two-masted canoe

BONNIE III went into Coast Guard service with Robison. He recently sold her, bought Cessna

PRIZED possession in the late '30's was this sleek schooner



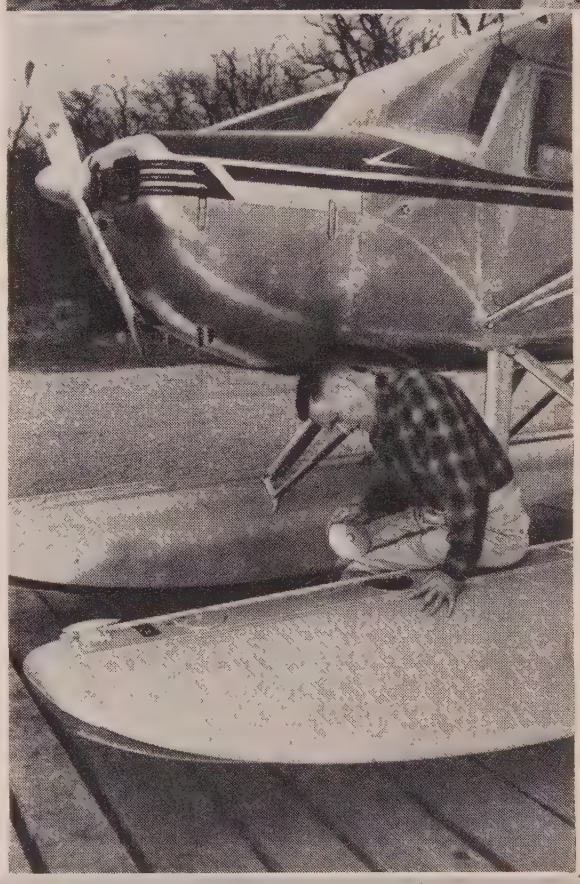
along with the new plan when he sold his last yacht and ordered a plane. Plunked the money on the counter . . . even though he'd never handled a stick in his life. Next day, he was out at Westchester Airport, ready for his first lesson.

It didn't take this embryo pilot long to find that it's sometimes a difficult proposition to mix flying lessons and business. In his case, business came second. He and Mrs. Robison consulted a friendly old-timer in aviation and found that the Southwest offered the best year-round flying weather. So off to Texas they packed, with one objective in mind—a private pilot's license.

Robison isn't a man to rush things, and he allotted a full two months to soaking up instruction before he applied for his precious ticket. Back East he traveled, running his business with one hand and sweating out the delivery of his new plane with the other. In due course, it came. Robison's first act was to have it installed on floats. An old sailor, you know, is never at home on dry land.

Any newcomer to the flying game, young or old, can well take a few tips from this adventurous oldster. Since obtaining his license, he's piled up some 110 hours of flying time. The catch is that a full 60 of this represents dual instruction. Unlike the great majority of brash new private pilots, Robison doesn't figure that he knows it all, in spite of the fact that his years of experience with sail have given him a vastly greater knowledge of the vagaries of wind and wave than the average new seaplane pilot can boast.

Now Eben Robison is all set to sail high, wide and handsome—ready to show his heels to his water-bound cronies in the U. S. Power Squadron. But there's one thing that bothers him. He's a great fisherman, but always of the salt water school. And he has yet to be checked out on the flimsy fly rods and light tackle he's going to need on the fresh water inland lakes now so tantalizingly nearby!



YACHTSMAN Robison became Flying Sportsman Robison when he bought a plane, became able pilot

DILBERT

By S. H. Warner and Robert C. Osborn

START YOUR ENGINE—Theoretically, you now are so familiar with your cockpit that you can locate and operate everything in it with speed and accuracy while blindfolded. No one can compel you to do this, but if you are interested in becoming an expert pilot—or an old one—force won't be necessary. What's more, you will similarly orient yourself before take-off in any new-type plane. If you don't, someday an emergency is apt to find you fumbling for the right control, or in the excitement, operating it improperly. In which case, your flight may terminate so suddenly that you will crawl out of it speaking broken English.

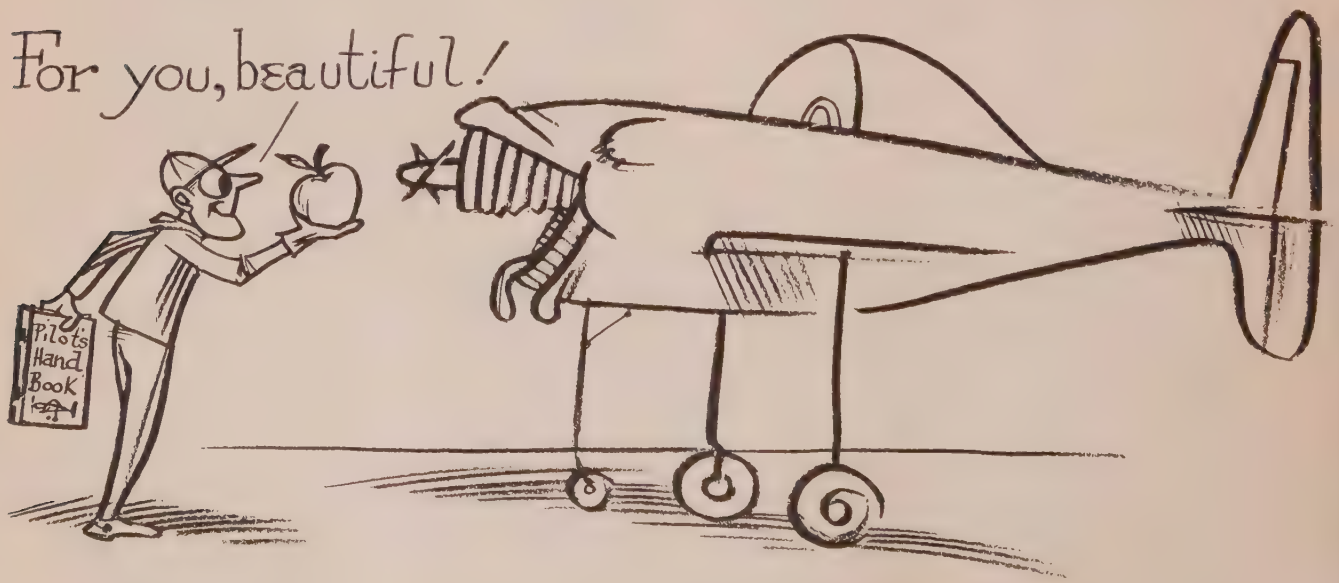
During our preflight inspection, we made sure that the ignition switch was off, that gas and oil tanks were filled and that the wheels were chocked. Now check to see that your plane is headed so the slipstream won't blow dust on spectators, into the hangar, or tip over some other airplane. Negligence on this point will make you very unpopular around any airport and may even cause an accident.

Of course, you know about checking for oil in the combustion chambers of the lower cylinders. Sufficient oil can leak past the pistons overnight to seriously damage your engine, if it is started in that condition. That is why propellers should be turned over two full revolutions by hand, before the first flight each day. This will disclose any accumulation of oil which can then be drained by removing the spark plugs in the bottom cylinders.

Always fasten your safety belt immediately upon getting into the cockpit. Adjust your seat and the rudder pedals for maximum comfort, but be sure you can reach the pedals through their full throw. You need full rudder for taxiing and for certain maneuvers. Check all flight controls for freedom of movement and watch that control surfaces move in the right direction.

The most helpless feeling in the world for an aviator is to have his controls jam in the air or find them crossed. We know of a bright Navy pilot that this happened to during World War II. One day he was scheduled to flight-test a PBY just out of major overhaul. The patrol plane had been inspected by the overhaul gang, the inspection crew, and by the pilot. After a thorough warm-up, she was eased down the ramp into the water.

The take-off was normal. With a light load and a smooth hull bottom, the newly overhauled engines were able to pull the plane from the water in a comparatively short run. After climbing to 50 feet, our pilot started a right turn. That's when it happened! The rudder pulled the nose around all right, but right aileron brought the right wing *up* instead of down. Naturally, in this attitude the plane started slipping toward the bay. (*Continued on page 61*)



Dilbert forgot to check the switch

Aviation Is Kid Stuff

(*Continued from page 20*)

and test instruments are wrapped carefully in protective canvas and used as demonstration models. The spacious lower baggage compartment is used to store valuable instruments and technical manuals used for instruction. A wooden staircase, built entirely by students, climbs to a ramp by the rear door. When funds for maintenance sheds were lacking, Aviation Shop students built them from discarded packing cases.

Students here have a new reason for studying the three "R's." Only those who have demonstrated better than average ability in mathematics can take the aviation courses.

"As we hoped," said Mr. Bancroft, "our program of mathematics received its greatest stimulus in seven years. Students now feel a definite need for arithmetic and are going all out to qualify for aviation courses."

Miss Thompson teaches not only navigation and meteorology but brings out in her classes advancements in global aviation. Great circle courses and famous airports of the world become more than a far away name to these students as they view frequent motion pictures and slides and listen to transcriptions on aviation subjects.

When adequate electric power is available, the fuselage schoolroom will be used for viewing motion pictures with a screen placed against the foreward bulkhead and a projector near the tail. At present films are shown in a conventional classroom. Heaters, coolers and lights are now connected with built-in equipment within the plane.

The Vineland School District, which maintains the Sunset School, is the poorest in assessed valuation of any of the 65 districts in Kern County. Only $2,200 per pupil is available for buildings and other improvements as compared with $750,000 in the highest tax district in the county. The total bonding capacity of the school, $65,000, would build only four modern classrooms. Yet this school is believed to be the only elementary school in the United States giving technical work with full-sized airplanes.

Just about everyone flies at the Sunset School. Superintendent Bancroft soloed in 1940 and has logged nearly 300 hours. He owns a surplus Fairchild PT-19, complete with plexiglas hatch and parachutes. Principal Harley A. Thompson spent two years teaching in the Boeing School of Aeronautics in San Francisco before accepting his present position. Even custodian Leon Clark owns an Aeronca trainer which he keeps on the field. He soloed last summer, and is well on his way toward a private license.

Nobody plays hookey from this school of 325 students. In 1941 the daily attendance averaged 88 per cent of students enrolled. Today attendance is over 94 per cent with one month this year recording 97.31 per cent attendance. County records showed that seven years ago juvenile delinquency in the vicinity of the Sunset School was the worst in the whole county, yet in the past two years only one boy has been in even minor trouble with the law. No equipment has been stolen or damaged on the school grounds, since the students feel that the school is actually theirs. After all, they built the swimming pool, landscaped the grounds, put up fences to pasture registered livestock given the school and now maintain a complete agricultural farm on the school grounds. Girls learn sewing, weaving and even make their own cosmetics. Harold A. Shane, of the California Youth Authority, said that the Sunset School "is the finest crime-prevention program I have seen in the State." Plans are under way for the Air Scout group of Arvin to use the school equipment for their future work.

This smooth-running school is primarily the result of eager, well-organized planning on the part of the flying District Superintendent. Rather than hire teachers merely for the subjects in which they are trained, he asks applicants about their hobbies and after-school interests. He pays top salaries for teachers rather than spending county funds on impressive buildings. Seven of the 25 teachers in his two-school district have turned down better paying jobs in town to remain with his modern education project. The average teacher age throughout the nation is 54 years. Mr. Bancroft's teachers average 31!

More than teaching the old-fashioned three "R's" to youngsters from an underprivileged agricultural area, the Sunset School is encouraging many students to continue on to high school by introducing them to subjects in which they are interested. For many of those who drop out of school at the end of the eighth grade and later enter military service, a choice of the Air Corps will be almost inevitable.

The little red schoolhouse with wings keeps flying pace with today's air age.

DEBRIS DISPOSAL

Ex-Flying Tiger Tommy Walker purposely crashed an Aeronca C-2 at an air show. He walked from crash, told onlookers to take their pick of souvenirs. All that remained half hour later is shown above; hour later that was gone.

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Standard of California's PLANE FAX

A page of service tips for private flyers and fixed-base operators

How high can your oil temperature go?

When oil temperature goes dangerously high, the lubricant becomes too thin. Since thin oil cannot provide an effective seal, your engine is plagued with blow-by and the danger of stuck-rings. Oil temperature should be held within your engine manufacturer's specified limits. Until the perfection of RPM Compounded Aviation Oil with its adhering agent and oxidation inhibitor, 200° F. was considered the top limit. With "RPM," however, the margin of safety has been considerably increased and operation at higher temperatures can be tolerated.

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Standard engineers constantly test Chevron Aviation Gasoline with devices like this electronic pressure-recording machine. This and other special tests mean more powerful punch in Chevron Aviation Gasoline that gets you to the airport you ordinarily couldn't quite make because it provides greater range. To consistently get long range, and resulting economy, stick with "Chevron"... like the leading manufacturers and airlines in the West who use Chevron Aviation Gasoline exclusively.

Hazardous to clean engines with gasoline

It is the flash point of a petroleum product that determines how safely you can handle it. Gasoline, when used to wipe off a plane, in addition to damaging fabrics and other materials, is hazardous because of its low flash point. RPM Aviation Solvent, highly refined with a high flash point, has a volatility range which prevents it from drying too rapidly for thorough cleaning of all metal planes and engine parts, and it can also be safely used to remove spots and oil stains from fabrics.

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AAF'S NEWEST heavy bomber is the Boeing B-50. The tail, shown here in semi-vertical position, is raised by worm gear to facilitate getting big plane in, out of hangars

MILITARY AVIATION

Top-flight Heavy Bomber

A GREATLY improved version of the famous B-29 *Superfortress* is now flying. Designated B-50, it is 75 per cent a new design. The most important difference is in the power plant, four 3500-hp 28-cylinder *Wasp Majors* with a General Electric CH-7 turbosupercharger for each engine, as against the four 2500-hp Wright *Cyclone* 18's of the B-29. Top speed of the 50 will be 400 mph, cruising at 300, with bigger bomb load, greater range. From the standpoint of the crew the greatest improvement is the pressurized cabin which maintains quarters at atmospheric conditions much lower than those found at the big bomber's actual high-altitude operating field, reported to be above 35,000 feet. General Kenney's Strategic Air Command is scheduled to get 100 of these big boys during the next two fiscal years (ending June 30, 1949). If it means anything, there may be some satisfaction in knowing there is not a better bomber anywhere in the world.

The Theseus-Lincoln

The 25-hour initial flight testing of the Bristol *Theseus* Mk. 11 turbine-propeller installation in an Avro *Lincoln* heavy bomber was successfully completed in March. More extended tests are now under way, and these will be followed by flight tests with the Mk. 21 version, with heat-exchanger, designed for economical flights of over 1,200 miles. At present the two outboard *Merlins* have been replaced by two *Theseus* (as in the case of the *Nene-Lencastrian*), but eventually the *Lincoln* will fly with four *Theseus* turboprops. Output is roughly 2,000 shaft horsepower, with 500 pounds of exhaust thrust per engine. Fuel consumption of the Mk. 11 is .62 lb per hp per hr (lower than straight jet engine). That of the Mk. 21 is .53 lb/equiv. bhp/ hr, which is getting right down into the piston engine consumption bracket (.40 to .50). Production engines are expected to be ready by next spring, in time for installation in the Handley-Page *Hermes V.*

In connection with the fuel consumption figures it is encouraging to note that the NACA Aircraft Propulsion Lab has developed design data for a turboprop engine which will yield a fuel rate of .42 lb/hp/hr, which is lower than most piston engines.

Speed Record

When Wright Field's Col. Albert Boyd streaked over the official 3-kilometer (1.863 mile) course at Muroc Army Air Base on June 19, he established a new international speed record to add to the U. S. Army Air Forces' present honors. Flying a specially modified Lockheed *Shooting Star*, the P-80R, the official speed for an average of four runs over the course, two in each direction, was 623.8 mph. This exceeds the previous record of 616 mph set by Group Captain Donaldson (now in this country) in a *Star Meteor* with two Rolls-Royce *Derwent V* turbojets in early September, 1946, by more than the necessary 5 mph required for a new international record. The third run was the fastest, clocked by electronically operated cameras, accurate to 1/1000 of a second, as 632.5 mph. Two days earlier Colonel Boyd broke the record unofficially when he made two passes over the courses, one at an astonishing 647.1 figure, and the other at 596.2, averaging 621.6 mph.

Power plant of the P-80R (R for Racer) is the Allison Model 400 turbojet engine, an advancement over the AAF J33-21 which powers production models of the P-80. The 400, which will be designated J33-23, will go into production later this year for the improved P-80 series. This improved turbojet has a take-off and military power rating of 4,600 pounds static thrust, with water injection and a reported use of the "after burner" principle for thrust augmentation. A redesigned compressor permits a larger air capacity, which makes the turbojet more nearly comparable with its British opposite number, the Rolls-Royce *Nene*. Allison and Lockheed engineers, as well as the AAF, deserve credit for the new record, held again after 23 years, by the U.S.A. N. F. S.

The Second Ten

(*Continued from page 24*)

was a member of the Curtiss team, doing all kinds of spectacular stunts. Once after a very excellent banquet at Nashville in 1910, he declared that he could fly at night—something that had not been done as yet. The entire assembly at the country club went out to the flying field where Hamilton had the owners of autos line up their cars with the lights shining on a strip of the field. With that light, Hamilton took off and landed.

Hamilton first came into prominence when he won the round-trip flight from New York to Philadelphia in 1910. Prior to that he had tried auto racing, trick bicycle riding, acrobatics in a circus, flying in dirigible balloons, and gliders.

Hamilton was fearless and reckless. He had more accidents than any other of the old timers but always seemed to get out with only a few broken bones. Hamilton used to say that at one time or another, he had broken every bone in his body. He was an exceedingly difficult pilot to handle and Curtiss finally fired him. Hamilton then ordered a Wright plane. When it was ready for delivery, Hamilton appeared at the field at Simms Station, Dayton, and told the mechanics to run up the engine ready for his take-off.

Everyone knew that the control systems of the two types of planes were so different that a pilot could not step from one plane to the other without instruction. As a matter of fact there were but one or two pilots who had mastered both types of controls. It was practically suicide to try such flying.

The mechanics remonstrated with Hamilton and told him that he was inviting a crash. Moving the controls back and forth, he asked, "Isn't this the way they work?"

So Hamilton climbed aboard, opened up the engine and took off. Down at the far end of the field was a large thorn tree with thorns at least three inches long. Hamilton had no trouble with his controls until he tried to make the first turn. The bank looked all right at the start of the turn but as the plane moved, the bank became steeper and steeper, until finally the plane was in a vertical bank. It was obvious that Charlie was in trouble. He was directly above that thorn tree when the plane started slipping toward the ground. Down through the tree it crashed. We all started running toward the spot and while still many hundred yards away, we could see that the once-new airplane was a complete wash-out. We assumed there was little chance of Hamilton's surviving, but we had not counted on his unusual luck.

When we were about two hundred yards away, we heard him yell "Come here and get this —— —— engine off my neck!" A typical Hamilton crash in which an ordinary pilot would have been killed, but Charlie came out with just a few broken bones.

Everyone expected that some day Hamilton would be killed in an airplane crash, but they were all disappointed. He finally died of tuberculosis in a hospital in Denver in 1916.

Another colorful aviator was John B. Moisant who, with his sister Matilda, started flying in 1910. Moisant was also a man who lived for thrills. When the Wrights were making their early experiments, Moisant was adventuring in Central America, aiding the revolutionary party. In 1909 President Zelaya sent Moisant to Europe to determine the capabilities of airplanes in battle. While that was the official reason, the actual reason was to get him out of the country. He was too good a friend of the rebels.

While in France, Moisant learned to fly and became world famous when he flew across the English channel in 1910, the first airman to ever carry a passenger across the channel. His was license No. 13. Moisant came to the United States in 1910 with a Bleriot plane and entered the Belmont Park aviation meet.

In the fall of 1911, Moisant teamed up with his sister Matilda and Roland Garros, the famous French pilot, for a barnstorming tour of the U. S. and Mexico. The tour did not last long for Moisant was killed in a plane crash in New Orleans the same year.

Airplane pilot's license No. 14 was given to Charles T. Weymann, who was practically unknown in the United States. He learned to fly in France as a hobby, and was given his license when he was just 21 years old. He had made quite a reputation in the European air meets and stepped into the super-airman's charmed circle when he won the Gordon Bennett air classic with a speed of 72 mph in 1911. Weymann flew for another year and then set aside his helmet and goggles for a quieter life.

Arthur Stone, with license No. 15, was another of the amateur sportsmen pilots. He learned to fly in a Breguet with a Gnome rotary engine. Stone, however, only flew (*Continued on page 52*)

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Flying Newsmen

(*Continued from page 23*)

aviation editor of the *Register and Tribune*, says, "We have never had a serious accident, death or serious injury as a result of our flight operations," emphasizing the record because during the first 10 years that the newspapers used airplanes they carried more than 35,000 passengers on promotional flights, a practice since discontinued.

The Des Moines newspapers' planes have given the papers many notable exclusive pictures and stories during their more than 18 years of flying coverage of all of Iowa and large portions of surrounding states.

Chronicled by Spaulding, the planes and some of the outstanding exploits of the "Good News" family were as follows:

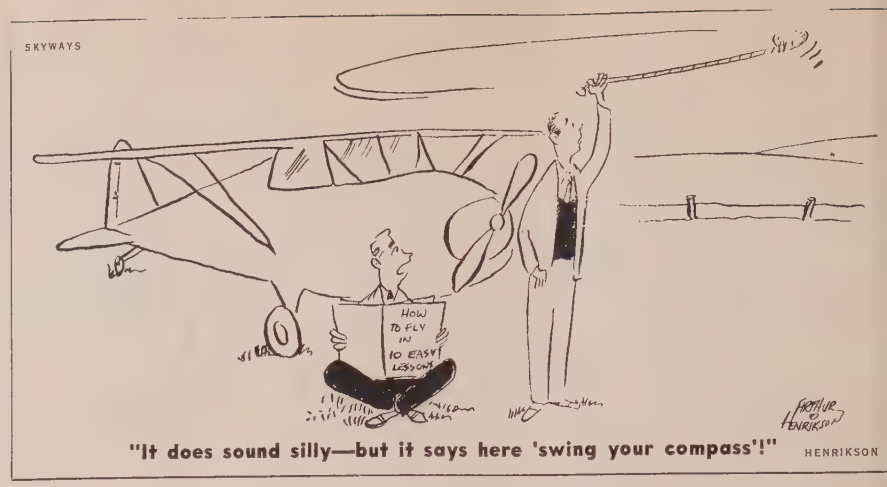
"Good News I"—a Fairchild five-passenger monoplane, covered the Lake Okoboji boat disaster in which nine lives were lost, and also met the German dirigible *Graf Zeppelin* when it passed over Kansas City, Mo., during its cross-country flight; "II"—Stinson, eight-passenger monoplane, bought May 17, 1930, covered the Spencer, Iowa, fire (when last heard from in 1934 it was serving as a Chinese Government bomber); "III"—Pitcairn Autogiro, aviation's latest gadget when it was delivered in August, 1931, and used on a public relations tour of the state; "IV"—a Stinson four-place monoplane that flew over 55,000 miles on news and photographic assignments; "V"—a Bellanca six-place job that went to Sioux City, Ia., in 79 minutes and aided police in rounding up the notorious Barrow gang at Dexter, Ia.; "VI"—another Bellanca six-place, purchased February, 1936, which flew the millionth mile for the newspapers' airplanes recently.

Spaulding nostalgically recalls that he saw the Spartan, "Good News VII," "at the Mobile Air Depot while I was flying with the Troop Carrier Command, but I do not know where it is now."

The *Register* and *Tribune* newspapers don't confine their flying activities to their own plane, since during the football season they normally charter three or four extras to get pictures of the major mid-western football games. As a standard rule, to avoid any conflicts, the pilot's word is final on all flights and he decides whether to place safety before meeting a publication deadline in case a decision is required. No reporter or photographer is required to fly, Spaulding says, but he can't recall anyone ever refusing to fly in any of the "Good News" planes.

Spaulding credits the good safety record to the rules and operations of the late Colonel Charles E. Gatschet who piloted the first seven planes in the fleet and had logged more than 10,000 hours when he was killed while flying a transport plane in India in 1944. The present plane is normally flown by staff photographer Donald Ultang. Spaulding held a private license before the war, but now both he and Ultang, as a result of wartime experience, hold commercial tickets. Although the *Swift* is fully-equipped for such flight and both pilots are qualified, no night or instrument-condition flights are made.

The Statesman newspapers of Boise, Idaho, give wider coverage to aviation than many larger papers and also operate their own planes to cover the high, wide-open spaces.



"It does sound silly—but it says here 'swing your compass'!" HENRIKSON

The newspapers—the Idaho *Daily Statesman*, the *Evening Statesman* and the *Sunday Statesman*—are served by two planes for spot news and photographic coverage, a Bellanca *Cruisair Sr.* and a BT-13, and one aviation editor, Dave Johnson, who is one of the pilots. The importance of war-enhanced skills in adding to the growing aviation family is found on the staff of these newspapers as well as many others. In addition to Johnson, who was a combat B-29 pilot, the *Statesman* papers include among their employees, ex-Col. Thomas G. Lanphier, Jr., famous Army fighter pilot who squired P-38's; Charles Bull, Marine pilot, and John G. Pickard who squared off in B-26's. All hold commercial licenses and take turns flying the planes, although Johnson is the only regular pilot on the beat.

In addition to the spot missions flown by the planes each week Johnson also takes either one on regular runs to Idaho airports to pick up information for his full aviation page in the *Sunday Statesman*. On a typical page one Sunday there was a main story of airline pilots' training under the G.I. Bill of Rights, another headline story on a CAA-United Air Lines controversy over Twin Falls, Idaho, service, almost a quarter page of columns on news from airports throughout the state, a long report from Johnson in his "Control Tower" column on the feelings of a tyro passenger on a regular airline flight, and small fillers on general aviation news. A full diet and well-rounded enough to satisfy anyone interested in flying, with spice added by a clever cartoon done by Bill Runyan.

To give a small idea of the type of coverage Johnson delivers in his airport news reports, he had items on students, general conditions and airport service at more than 13 fields, many of which he toured himself by plane, and those that happened to be weathered in that particular week were reported on by telegram and mail with information as to when certain areas were expected to be opened again to safe flying. On the face of it, the *Statesman* papers are attempting to give one state the service and reporting that aviation deserves, and based strictly on the printed results, the flying boys and girls are in very good hands in this area.

It is not difficult to list the benefits aviation can contribute to newspaper publishing in providing fast, exclusive spot news, in addition to reporting aviation news for enthusiasts. But the majority of the newspapers which have turned to using airplanes are primarily interested in exclusive, interesting photographs. In this connection, some well-heeled newspaper organizations have take to flying experimental dark rooms on wings although it is important to remember tha only the biggest metropolitan dailies ca afford this luxury because of the high orig inal cost of the larger planes.

The Philadelphia *Evening Bulletin*, whic used to operate a twin-engined Cessna, no has a Beechcraft D-18S with pilot and c pilot for spot news pictures that are pub lished the same day they are taken. Th *Bulletin's* regular pilot is Kurt Heilbronn formerly one of General Dwight Eisenhow er's regular pilots in the ETO. As additiona duty the plane serves as an executive trans port and in special cases flies important pe sonages to Philadelphia for interviews an public relations purposes.

One of the most luxurious and complet of all newspaper planes in operation is th Lockheed *Lodestar* of the New York *Heral Tribune* which made its debut at last year National Air Races at Cleveland. Equippe with typewriters and a desk, the modifie transport has one compartment which ca be converted into an aerial dark room for th processing of photographs in flight. Six r clining chairs, a three-seat couch, a sma oven and a refrigerator are regular equi ment for the comfort of newspapermen executives and other passengers.

As an additional starter in the newspape sweepstakes, one of the few amphibians no in service is the Grumman *Mallard* owned b the Toronto *Globe and Mail* which is use for long-distance news breaks. Amphibian provide greater utility in lake and rive country where landing fields are at a pr mium and new types of light amphibian may interest newspapers which previous had decided against using landplanes.

Newspapers also are beginning to us airplanes in increasing numbers for purpose other than covering the news, such as straig executive transport, delivery of printe papers, speedy delivery of plates for th printing of separate editions in other citie states and countries far from home, and f experimental purposes to find out how th can be used in all types of operations.

Telegraph, telephone and radio may d the larger job in swiftly reporting the new but until someone invents a better mag carpet for the transportation of photogr phers and reporters, the airplane seems de tined to stick around. On the basis of "wh print the facsimile when you can get th original?" it seems sure that newspapers w not go automatic for quite a while.

Sporting Thing to Do

(*Continued from page 27*)

art, not only in transporting me rapidly to harleston but also as a means of *inspecting* rassy Lake on the way over. With Autumn omes extremely low water, and 15 minutes f judicious study from the air often means ie difference between success and failure. assable trails, open pools, and deep clear ins can be spotted easily from the air and y making a few mental notes, hours of back-reaking paddling can be avoided.

I scouted it well one particular morning nd after consummating the loan of a pick-p truck, I located my paddler, Ell Griffin, nd struck out on the last leg of my journey.

My dusky companion was vocally skepti-al of my choice of sports as we bounced own the corduroy levee top. "Cap'n," he uttered, "dis ain't no time to mess wit dem outs, 'specially wit de woods fulla ducks. 'spect we could knock us off a sack uv allets on de nawth side uf de deadenin' ith'out no trouble at 'tall."

"Listen Ell," I said, "how many times ave I got to tell you that the duck season's ot open yet. In two more weeks we'll knock ff the 'mallets' but today, it's a case of fish r go home."

Upon reaching the end of the levee, I opped the car and in the half light of awn, we unloaded equipment. Two hundred ards away, the lake shimmered in the morn-ng sunlight, almost hidden by tangles of ndergrowth. Quickly we shouldered our load nd struck out for the landing. Hoar frost ill lay lightly on the bushes and the leather acket was pleasant to feel. We loaded the oat, then slipping away from the landing ith scarcely a sound, we eased along the ank. Seven mallards circled an open pool nead and we watched as they flared and ettled.

"Cap'n," groaned Ell, "we's sho' fixin' to iss some pow'ful good duck shootin'!"

"Ell," I replied (sternly I hoped), "you've ot to break yourself of this 'out-of-season' unting urge. In the first place, it's against ie law and in the second place, it's just not ie sporting thing to do."

Ell remained silent for a moment, watch-ng the ducks as they towered upward. Then e spoke, "Cap'n," he asked, "jus' whut does ou mean by dat *spot'in'* 'bizness'?"

"Well," I explained, "it's this way. A good ort never shoots game out of season, not ntirely on account of the law but simply be-ause it's not fair to the game. Take us for xample: there's no one around and we'd ever be caught but since we're good sports, e simply don't shoot those ducks."

"Yas, suh," grunted Ell, hesitantly, "but ey sho' is a heap uv mallets goin' plumb waste!"

Driving the ducks from my mind, I di-ected him to slow our progress and with ie boat moving in the general direction f a famous old bayou run known as "Phil's ole," I opened my tackle box and pored ver its contents. Somewhat against my better dgment, I snapped on a semi-surface red-eaded plug, primarily because I like the oise it makes. Due to the crispness of the orning, I felt that its chances were slim ut that old red-head was a Grassy Lake pecial" and I wanted to hear it talk a bit. he day was young and so I felt I could ford to waste a bit of time while absorbing the beauty and quiet of my surroundings.

For a full 30 minutes I worked the plug, fishing carefully and using all of the little tricks that I had learned through the years. But nothing struck. We drifted along and after fruitlessly working a particular "fishy" spot without a rise, Ell spoke: "Cap'n," he muttered, "how come you don't take dat plug off and try sump'n else? Dem col' trouts is l. ying on de bottom an' dey sho' ain't gon' show ernough sperrit to come all de way to de top an' hit dat thing."

Being obstinate, I ignored his good advice and continued to drop the lure into likely pockets. Mazes of cypress knees, little lanes of open water between beds of lilies and yonkapins offered excellent hides for bass but as we slipped along through the forest, the plunk of the bait was the only sound to mar the stillness. At the end of an hour, not a strike had come my way.

"Cap'n," remarked Ell again as we neared Phil's Hole, "hit look to me lik' a man whuts been fishin' 'long as you is would git down 'mongst dem trouts's wit' a sinkin' bait. Dem feesh ain't goin' come up to *you;* you got to go down atter dem!"

This time I heeded his advice, bringing out a favorite of mine, a tiny sinking plug with fluted lip and deep running qualities. Quickly I snapped it on, this time adding a three-foot strand of lightweight leader, a "must" in gin-clear water when using a sinking bait. Making an experimental cast. I watched as it wabbled and wriggled through

(*Continued on page 54*)

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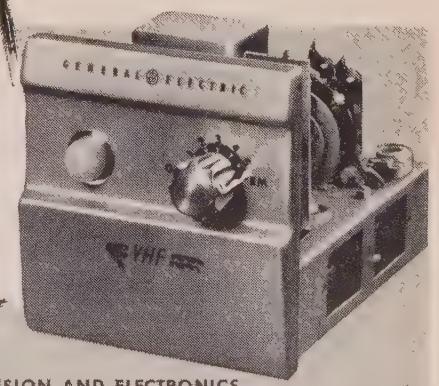

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The Second Ten

(Continued from page 49)

for about a year, stopping his aerial antics entirely in 1912

Quite a few of the pioneers made their appearance as airmen secured their licenses, competed in a few aviations meets, entered and perhaps won a few races, and then withdrew from further flying, all within a few months. Such was the flying career of Harry S. Harkness, holder of airplane license No. 16. In 1910 Harkness designed and built his own plane which he called the Harkness monoplane. After competing in several of the air meets and races he quit flying. He flew for the thrill, for fun and for sport. After giving up flying, he continued his business in New York. He died several years ago and few people who knew him realized that he had helped to make aviation history.

To Eugene Ely went license No. 17. Ely learned to fly with Curtiss early in 1910 at Hammondsport. Within a few weeks he was one of the best Curtiss pilots. As an exhibition pilot, he was always seeking new methods of thrilling the crowds. For months he was one of the foremost "stunt" pilots in the U. S.—if they could be called that with the limited capabilities of their planes.

Ely came into prominence in the summer of 1910 when he flew for the Emperor of Japan. In November of that year he landed on the deck of the *U.S.S. Birmingham*, thus anticipating the aircraft carrier by many years. Special arrangements had been made with sand bags to slow the plane down and stop it from running into the gun turrets.

The first experiment was so successful that he worked with the Navy to develop the idea further. The *U.S.S. Pennsylvania* was selected and its decks prepared as had been those of the *Birmingham*. In January, 1911, while the *U.S.S. Pennsylvania* was lying at anchor in San Francisco harbor, Ely flew from shore and landed aboard. He then turned his plane and flew back to shore. It was quite a feat, for the deck was only 115 feet long and 30 feet wide.

During the next few months Ely gave exhibitions at county and state fairs. On one occasion, while he was making a landing, a spectator ran across the field in front of his plane. The man's frantic endeavors to get out of the plane's way seemed to give the crowd not only a thrill but also quite a few laughs. The next day Ely used one of his mechanics as the man about to get run down by the plane and included it as a regular feature. It went over big. Such flying required the most exact timing, estimation of distance and coordination of senses on the part of Ely. The slightest miscalculation could only end disastrously. It came when Ely was pulling the stunt at Macon, Georgia, in the fall of 1911. Ely was killed, a victim of "trying to give thrills to the crowd."

Early in 1905 Dr. Alexander Graham Bell, Glenn Curtiss, Lt. Tom Selfridge, and J. A. D. McCurdy began their experiments with kites and planes. Their first efforts were with Dr. Bell's Tetrahedral kite. This was a gigantic, weird looking creation made of hundreds of triangular shaped cells. Theoretically, it was aeronautically sound but practically, it never flew as a plane. The group soon turned their attention to the orthodox plane. It was not until 1908 that they were able to build one that flew. That one was called the *Silver Dart*. McCurdy made several straight away flights in it and thereafter acted as test pilot for the group.

When that group broke up, McCurdy joined the Curtiss exhibition team. He was given license No. 18. In 1910, he installed a radio set in his plane while giving an exhibition at Sheepshead Bay, N. Y., and, as far as I know, was the first man to send messages from an airplane to the ground. The messages were heard for a distance of about two miles. In January, 1911, McCurdy started a flight from Key West to Havana, Cuba. Everything went according to schedule until he was about 7 miles from the Cuban coast, when his engine quit cold. McCurdy landed in the sea and was picked up by a passing boat. McCurdy did very little actual flying after that but has always been allied in one way or another with airplane activities.

In those days when so much depended upon the feel of the pilot, every once in a while a "natural born" pilot made his appearance. He seemed to learn to fly more quickly, and did not get into as much trouble. He seemed to have an instinctive ability to always do the right thing when trouble made its appearance—as it did far too often in those days. Such a pilot was the holder of license No. 19, Walter Brookins.

While the Wrights were carrying on their experiments at Simms Station, Brookins was a high school student at Dayton. He heard of the Wrights, went out and saw them fly, and from then on could not keep his mind on his schooling. (*Continued on page 55*)

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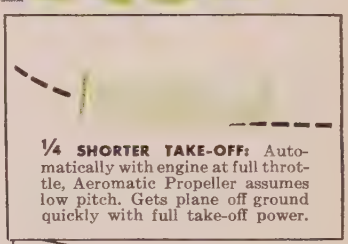
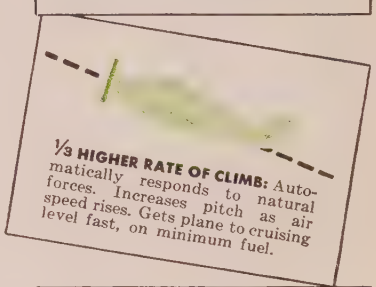
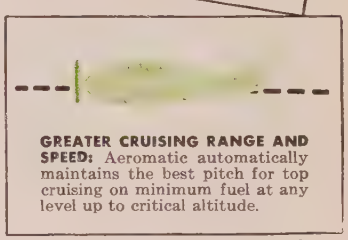


¼ SHORTER TAKE-OFF: Automatically with engine at full throttle, Aeromatic Propeller assumes low pitch. Gets plane off ground quickly with full take-off power.



⅓ HIGHER RATE OF CLIMB: Automatically responds to natural forces. Increases pitch as air speed rises. Gets plane to cruising level fast, on minimum fuel.



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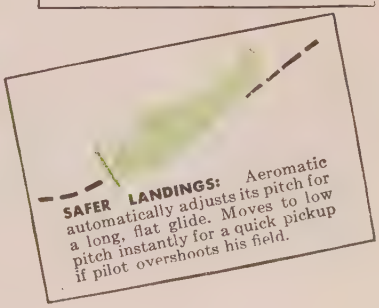

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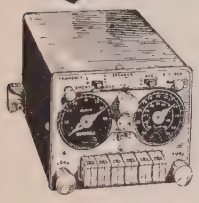

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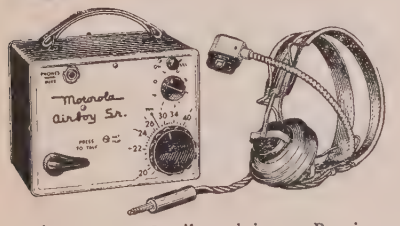

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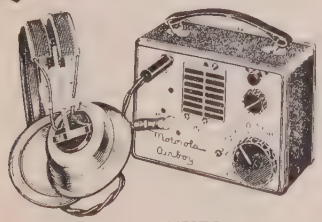

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Sporting Thing to Do

(Continued from page 51)

the thickly grown waters. This little bait, though easy to "hang up," is a killer in Southern waters and a slashing strike on the third or fourth cast, did not catch me napping. The bait, traveling slowly and very deep, was taken with a savage lunge, but with reflex action I set back on the rod as the fish reversed his field. Down he bore, scattering moss and leaves in his wake but the pressure of the rod soon told and I led him in. Ell strung him, grinning toothily and as I reviewed the cast, I decided to experiment a while by literally dragging the bottom with my lure.

Apparently I had struck the right combination—namely, a slow, deep, and erratic retrieve, for a few minutes later another fish charged the bait. I held him for a moment, then the line went slack and he was gone.

Disgruntled, I inspected the hooks but found them sharp so after suggesting that we move along, I lighted a smoke and rested for a while. By now the sun was well up in the sky and its rays were warm on my back. Quietly Ell moved the boat along toward Phil's Hole, knowing from experience that this spot was always my destination.

Upon reaching the place, Ell pointed the bow of the boat between two huge old cypress that guarded the entrance, and after selecting a likely spot, I released the bait. On the third cast, a slowly moving fish sucked in the little plug, holding motionless for a moment and then boring away. Deep down he surged, shaking his head as he went. After an eternity it seemed, he floundered to the surface and spent himself in a ponderous leap. Carefully I snaked him over a limb. Then, with a sweep, Ell lifted him aboard.

"Pull for the bank," I grinned, "we'll build a fire and make a pot of coffee."

In a little grove of hardwood, we built our fire. Ell made the coffee and with sandwiches, we had a pretty good meal.

Now the sun blazed down intensely. I rested against a fallen log at the water's edge, content with the world. Suddenly I was brought to attention by a sweet, familiar sound. From directly overhead came the song of beating pinions and glancing upward, I saw them—a huge flock of mallards. They circled, lowering steadily and then, with perfect precision, they flared before us and settled to the water, not 20 yards away! Calm they preened themselves, gabbling contentedly and oblivious to our presence. They began to feed in the shallow water and as I cut my eye toward Ell, I was amused by his glassy eyed stare. Slowly his hand crept toward his double gun but I remained silent. The ducks worked closer, offering the easiest possible crisp shot but as I held my breath, Ell's fingers moved *away* from the gun. With an audible sigh, he turned to me and whispered "Cap'n, hits sho' a good thing dat *I'se a reg high-class spote!*" With a smile, I rose from my seat, flushing the ducks and we watched as they wheeled away through the timber.

"Senator, do you always have to lean to the left?"

After extinguishing our blaze, we again took up our fishing. With the warming effect of the sun on the water, bass rose more readily and I switched to the semi-surface plug. This time it worked and within an hour or so, I hooked and landed two more keepers. Slowly we worked through the forest moving in the direction of the boat landing and, as Ell pointed the bow between two tupelo gum trees that marked the entrance to the dock, I dropped the bait in a little lane ahead. Allowing it to rest motionless for a moment, I snapped the rod tip lightly causing the lure to emit a plunking sound as it disturbed the water. As it came to rest I again skittered it across the surface and when it moved, a fish struck instantly in a smother of foam. Immediately he charged toward the boat, the viciousness of his strike having set the hooks solidly. With luck, I stopped his first mad run but after sulking for a moment, he charged under the boat. With all the pressure that the rod could bear I worked him out, finally worrying him down and leading him in. A beautiful fish, almost black, and considerably larger than any of the others—a fitting climax to a fine day's sport. With this thought in mind, I laid down the rod, reached for the extra paddle and set out for shore.

We drove through the peaceful country side in comfortable silence. The sun was still well up over the horizon and even though I was quite a way from home, I knew that the little Cessna would get me there well before dark. Ell dozed beside me but when a few miles from home, he awakened and murmured: "Cap'n, on account uv us not killin' none dem ducks, dat makes us some mighty fine spotes don't it?"

"That's right, Ell," I replied. "We're good sports and the sporting thing to do is never take more game or fish than you need and never kill out of season."

A few minutes later, I deposited him at his doorstep and divided the fish, making certain that he took the larger. As I prepared to drive away, Doll, Ell's diminutive but sharp tongued spouse, stepped out of the house to greet him.

"Ol' man," she exclaimed as he presented her with the fish, "ain't you got no ducks or nothin'? You know I don' like feesh a lot dey ain't a streak uv meat in de house! How come you didn't bring home ducks for sump'n?"

Ell drew himself up to his full six feet and in the Autumn stillness, I could hear him clearly as he answered. "Woman," he snapped, "don' you know de duck season ain't open yet: *Us spotes don' shoot out season.* Hit jus' ain't de spo'tin' thing to do. An' besides dat," he continued in a much lower tone, "*Cap'n would'a broke my neck ef'n I had!*"

The Second Ten

(*Continued from page 52*)

t was not long before he was applying to he Wrights for a job.

He was an especially apt pupil, learned apidly, and was soon performing maneuvers nd stunts that older pilots could not master. He became known throughout the country as he "School Boy" pilot. Although the maneuers that could be performed on those Wright Flyers were exceedingly limited, Brookins came out with new ones—the Ocean Roll, the Spiral Glide, the Dip of Death and other hair-raising stunts. He was the first irman in the world to gain an altitude of mile in the air. This he did at Atlantic City in 1909.

He was selected to fly the Wright Racer in he Gordon Bennett race at Belmont Park in 910. It was a small tricky plane with a big 0-hp engine, very unusual in those days. The ship was designed to travel at a top peed of 90 mph, just about 30 mph faster han any other plane of that period.

Unfortunately, the engine quit while in light and Brookins had trouble galore in rying to land the plane amid spectators, grandstands, race track, fences and poles. The plane rolled over and over on the ground nd was soon a twisted mass of wires, fabric nd wood with metal parts everywhere and Brookins wrapped up inside. Just why he vas not killed, no one could understand. He ame out with several broken bones but with is enthusiasm for flying intact.

During 1911 when there were 99 fatalities n aviation, Brookins saw one after another f his companions pass out of the picture. Many of those killed were supposed to be he best airmen we had. In 1912 Brookins vithdrew from exhibition flying and formed is Safe and Sane club. He was years ahead f his time, for he received support from either the public nor the airmen. The crowds enjoyed the thrills; they wanted to ee the Roman Holidays just as long as the irmen would risk their necks.

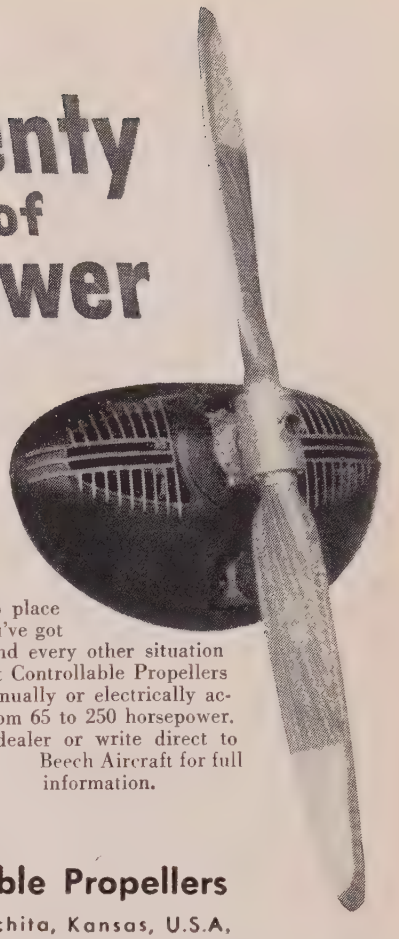
Brookins stopped flying in the summer of 912. But he had been bitten by the bug and o could not give up aviation entirely. Recently his firm brought out a new type of ving form with greatly increased efficiency. Brookins was the first to make the now trite tatement, "I would rather be the oldest living pilot than the best pilot."

The next two pilots, with license No.'s 20 nd 21, started flying together, became stars ogether, flew the same types of planes, competed in the same events at the air meets, were called the Heavenly Twins, and were killed within a few weeks of one another. They were Ralph Johnstone and Arch Hoxey.

Johnstone, Hoxey and Brookins formed the irst Wright exhibition team. There was no tunt too dangerous for those men to try. They climbed higher and higher in the air o attain new altitude records. They did it ll with a little 24-hp engine. Quite a jump o the 3,000-hp engines of today.

Hoxey first gained prominence in the fall f 1910 when he made a non-stop flight from Springfield, Illinois, to Clayton, Missouri, a distance of 89 miles. People were astonished when he arrived ahead of the train which started when he did. After refueling, he continued his trip and landed at St. Louis. There he made history by taking President Theodore Roosevelt (*Continued on page 61*)

It takes Plenty of Power to turn a Stand-still into a Take-off



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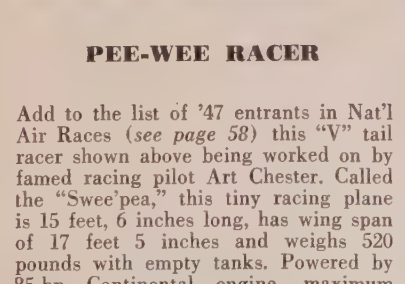

PEE-WEE RACER

Add to the list of '47 entrants in Nat'l Air Races (*see page 58*) this "V" tail racer shown above being worked on by famed racing pilot Art Chester. Called the "Swee'pea," this tiny racing plane is 15 feet, 6 inches long, has wing span of 17 feet 5 inches and weighs 520 pounds with empty tanks. Powered by 85-hp Continental engine, maximum speed is expected to be between 190 and 200 mph. Like the tiny racer developed by Tony LeVier, this ship also cost $5,000 to build. "Swee'pea" and LeVier's racer are two of 20 ships being readied for Goodyear Race in '47 Nat'l Races.

Fly It or Drive It

(*Continued from page 29*)

the middle vertical fin, they form, when retracted, the trailing part of the horizontal stabilizer. Extended, they open up like a book. The vertical fin surface is divided between three sections, to keep the over-all tail height down to accommodate the folded wings, and to save fuselage length.

The brakes and the pivotal wing, with its built-in elevator feature, combine to make the ship stall and spin proof, say its creators, and safely allow an exceptionally steep angle of glide.

With the brakes open, the plane can glide down at a 17-degree angle, landing at a point just beyond 3,000 feet from a given position 1,000 feet up. This obviates the need to sideslip on occasion, as in an ordinary plane. With the brakes closed, the glide angle is reduced to only 7.2 degrees, putting the ship on the ground 8,000 feet from the same starting position.

Stage-minded pilots wishing to impress ground watchers with their skill in hot dives will find the *Planemobile* unsatisfactory for these theatrics. A limitation on the angle at which the wing can be set to attack the air makes a steep dive impossible; at even the maximum diving angle, the ship maintains a positive lift on the wing.

Since there is no elevator in the tail, Whitaker and Zuck point out, the tail is never moved up or down out of the flight path. "Therefore, the nose of the *Planemobile* never deviates from the direction of flight. When the nose goes up or down, the airplane in all circumstances will be doing likewise at the exact angle indicated." Anyone who has ever stalled because of the deception in this respect common to the usual airplane, will appreciate this advantage.

Other pertinent data include steerable front wheels, hydraulic road drive, size to fit the average home garage, and two-control flight controls.

The front wheels turn the same as an automobile's, by means of cables, but much sharper. The steering device, like the folding and pivotal mounting of the wings, is patented.

Power to drive the ship on the ground with its 40-hp Continental engine is delivered through the single rear wheel, just forward of the tail. It will be transmitted through fluid, as on certain modern cars and buses, because of the saving in weight entailed by a clutch and gears. Presently, the brake is on the rear wheel only, but it is planned to extend it to the front wheels as well, which will be comparatively easy. It is also planned to replace the current engine with one of the 65- or 75-hp engines. There is a foot throttle for road travel.

The ship is 15½ feet long, about shoulder high to the average man and, with wings folded, it is the width of an automobile, so that it fits a single garage or stands alongside the family car in a double garage.

The two-control flight control . . . there being no elevator, there is no rudder bar . . . makes for further trouble-proof simplicity of operation.

With her gull wings arched out for flight, the ship spans 31 feet, six and a half inches. Swinging the wings into flight position from their removable cradle on the fuselage is the work of two men and takes 10 minutes.

Empty, the plane weighs 740 pounds loaded, 1,150 pounds. This weight will b increased by about 60 pounds when th roadability mechanism is installed (the boy are waiting with this until the ship ha flown). The wing loading is nine and a ha pounds per square foot, somewhat more tha that of the Piper *Cub*. There is room for on passenger, sitting beside the pilot, and 1 gallons of gasoline, which will carry it 28 miles. Cruising speed will be 80 mph, an top 90. Both speeds will be increased b about 10 miles with installation of a 65-h engine. Landing speed will range betwee 40 and 50 mph. Service ceiling with the pre ent temporary engine is estimated to b about 12,000 feet.

The idea for this revolutionary vehicl originated with Zuck back in 1931, whe he was a farmer near Lancaster, Pennsy vania. He had been risking his neck as glider hobbyist in a craft which was notabl given to stalling . . . perhaps because h built it with no more guidance than a photo graph. One day he watched thoughtfully a an airplane stalled and spun in, killing th pilot.

Zuck thereupon decided that what th country needed was a stall-proof airplane . . and one which, for further utility, could b driven on the ground. He quit farming, too a course at the Casey Jones School of Aero nautics at Newark, meeting expenses fo three years by working as a mechanic at th Newark Airport.

In his spare time he designed the win and other features of today's *Planemobil* The wing is unusual for being more tha twice as wide in the middle as at the tip It is also considerably thicker in the middl tapering toward the ends along the top su face, so that an illusion of being arched created; the bottom surface is straight.

Moving to Los Angeles in 1936, Zuck too a job at an aircraft plant, and there me Whitaker, who the same year came dow from Spokane. Zuck, as Whitaker puts i "was the only guy in the plant who seeme to know what he was doing," and Whitake therefore needed no persuasion when Zuc invited him over to his house one evenin to see a model of the ship he had bee working on.

The two joined forces to build a life-size experimental version, using Whitaker's ga age at the rear of his house as their sho Whitaker's brother, Frank, who later wa lost when, as a lieutenant commander wit Columnist Raymond Clapper as his pa senger, he collided with his wing man i leading his squadron in the Marshall Island invasion, also was in on the project. Fran contributed $250 for power machinery in th ship. The total investment in tools was $60

By canabalizing landing wheels, engin propeller and certain instruments from washed out *Cub*, and getting their sprue wood and airplane tubing and metals und the wire before Pearl Harbor, they kept th cost of the ship itself down to $800.

The 10,000 man hours of work they ha put in, actually very little time for develo ing a new airplane, they don't count; it w spare-time fun.

They have no thought that the money time will have been invested in vain. By th time this reaches print, they are confide that conditions at California's Rosamond D Lake will have become right for a test tak off and flight—and proof of their theorie

(*Continued on page 59*)

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Pylon Pilots

(*Continued from page 39*)

flown by Pancho Barnes and Jimmy and Mae Haizlip in many speed events. In fact, the ship in which Frank Hawks made most of his cross-country speed dashes was a *Travelaire*. Lee Miles, in his Miles-Atwood Special, established a speed reputation in the early days of racing. It was Lee's misfortune to crash in full view of the thousands at the Nationals in 1937, thus ending a fine career of airplane building and real flying.

Harold Neuman got into mock dog fights with Art Davis in the Howard jobs, *Ike* and *Mike*. Harold flew the Howard entry, *Mr. Mulligan* in 1935 to win the Thompson, and he came in 2nd in the Greve race staged in California at the 1936 races. Neuman toured the country with the "All-American Air Aces," putting on exhibitions in the tiny Howard ships.

Joe Jacobsen flew the Howards and the Keith-Riders in many events. Tony Le Vier stood the fans on their feet in the Greve race in 1938, hitting a speed of 250 mph. Le Vier came back in 1939 and placed 2nd with a speed of 271 and kept the fans on their feet all during that race, too. Tony is connected with one of the larger plane manufacturers in the West, but still enters races.

Bill Ong flew the Howards and the Lairds in many events. Bill finally gave up the racing game and settled down to the comparatively quiet life of running an airport out in the Middle West.

Lee Gelbach was the pilots' pilot. He tested the "X" ships. It was Lee's job to take all the risks to uphold the designers' ideas. Lee could be counted on to fly anything with wings and for years he played a large part in the National Air Races. Doug Davis flew them all, too. It was Doug who won the 1934 Bendix in a Wedell-Williams and who gave his life in the 8th lap of the Thompson race in the 1934 Nationals, putting an end to his great career as a pilot as well as a sportsman.

Joe Mackey, the lad from Findlay, Ohio, startled racing fans by coming across the field upside-down in his taperwing Waco. The plane was painted a bright color with his company's name printed on the sides. Joe would make snap rolls and outside loops with his pals, Mike Murphy and Bill Hightower. Joe holds the Freddie Lund Memorial trophy for his brilliant flying at the Miami All-American Air Races in 1930. Joe is now Major Joseph Mackey.

Milo Burcham flew his P-12 Boeing upside-down better than right-side up. He used to fly upside-down across the field, picking up a handkerchief from the the ground with his wing tip. Milo established a record for upside-down flying in his ship. A record that, as far as we know, still stands.

Harold Johnson, flying the 10-ton Ford Trimotor, kicked that ship around the sky in all kinds of maneuvers for the air races.

Gordon Israel's *Redhead* racer was a familiar sight at the shows, as well as the Crosby *Racer* flown by the late Harry Crosby.

The year 1946 saw the National Air Races resumed after a six-year absence due in part to the war. Many new faces and ships were entered in the seven events over the Labor Day week end.

The Bendix Trophy race, from Burbank, California, to Cleveland, drew 17 entrants flying many types of aircraft never before entered in racing, but which were used as fighting and bombing aircraft in the war. The trophy this year was claimed by an old-timer to the Bendix race, Paul Mantz. Paul, flying a North American P-51 *Mustang* surplus fighter, flew the distance of the course, 2,048 miles, in 4 hours, 43 minutes, 14 seconds at a speed of 435.501 mph.

Second place in the Bendix went to Jacqueline Cochran who also flew a North American P-51. Jackie was given place position when it was found Bill Eddy's time was computed wrong. Her speed was 420.925 mph, her time 4 hours, 52 minutes, and 00.4 seconds.

Third place went to Tommy Mayson, a newcomer in another P-51, and 4th place went to Bill Eddy who had the bad luck take-off time. His speed was 373 mph.

The Bendix for jet aircraft was won Colonel Leon Gray flying a Lockheed P-8 Colonel Gray flew the distance in the t time of 4 hours, 8 minutes, 25.2 seconds. speed was 494.799 mph. Paul Mantz was 35 minutes behind Gray on the trip.

Second place went to Major Rudell i P-80 with a speed of 474.836 mph, and place to Major Barber who was forced land his P-80 at Topeka, Kansas, for f

In the Sohio Trophy race, which repla the Greve race of past years, there w seven entries. The race, flown over a 240-m triangular course, was won by an airline p on his vacation. Dale Fulton, flying a *Must* at a speed of 352.781 mph, took the hon away from such air-racing old-timers Earl Ortman and Bill Ong who also w entered in the Sohio race.

Second place went to Bill Ong in a P- and third place went to another newcom to racing, Jack Hardwick, flying a P *Lightning*. He attained the fastest lap of race, 322.625 mph.

The Halle Trophy race for women o was a new event of the show, being won Miss Marg Hurlburt flying an AT-6 trai Marg flew with the WASP's during the w She covered the 75-mile course in 22 minu 24.04 seconds at a speed of 200.588 mph found out from her later that she flew fast and at such a speed the structure of ship loosened. Marg was killed recently.

The Weatherhead speed dash for jet craft was won by 1st Lt. W. J. Reilly, fly a Lockheed P-80A. He made two runs opposite directions, attaining a speed 578.360 mph, for the one-mile course. Sec place went to Captain J. L. Moutier in P-80 with a speed of 572.792 mph.

The Thompson race for jet was staged the first time and promises to be a yea event. Major Gus Lundquist took 1st pl in a P-80, with a speed of 515.855 m Second place went to Major Robin Olds w a speed of 514.715 mph, and 3rd place Captain A. Fell with a speed of 509.382 m

The Thompson for "R" ships had twe entries, all flying surplus Government equ ment. The race—300 miles over a three-py course—was won by Alvin "Tex" Johns in a Bell P-39. Johnston, flying a great r from the beginning, outflew the entire fi by taking his ship around the pylons lik veteran. He attained a speed of 373.908 m and kept the pace throughout the race. S ond place went to veteran Tony Le Vier fly his Lockheed P-38 behind Johnston throu out the race. Le Vier just couldn't catch though and he decided to stick to his pl position. His speed was 370.193 mph. E Ortman came in 3rd in his P-51. He flew a speed of 367.625 mph.

The Thompson, although exciting to wa has lost such colorful pilots as Roscoe T ner, Doolittle, Haizlip, and the other b There's no doubt about it—the Thomp should be reserved for the "backyard" pi and engineers only, the fellows who b their own planes. These pilots are the pioneers of flying. It is their ideas that b build the planes of tomorrow.

Let the Thompson Trophy be offered ye for each outstanding "backyard" model. if there has to be "factory" plane racing, another trophy be put up, but by all me keep the "big race" for the real pione the merchants of speed.

SMALL RACER

One of the smallest all-metal planes, an 800-pound midget, recently made its first flight. Designed and built "at home" by group of Lockheed pilots, engineers headed by Tony LeVier, ship is powered by 85-hp Continental, has top speed of over 200 mph

Fly It or Drive It

(*Continued from page 56*)

Ground tests up to now at the lake have
en encouraging. Taxied with the propeller,
e ship has shown ample stability and con-
ol at speeds which have reached 75 mph.
ie only problem has been to keep it on
e ground after 40 mph is reached. Seasoned
lots who have seen the ship are favorably
pressed, anxious to try it out on the
ng. Whitaker and Zuck are amateurs who
ve had only a few hours aloft.

Looking into the future, they have plans
paper for a successor ship of the same
sic type but embodying the lessons they
ve learned from building this one. The
w ship will have a 125-hp engine and a
0-mile range on 26 gallons of fuel. It will
iise at 140 mph, do 155 top, have a service
iling of 19,500 feet, weigh 872 pounds
ipty and 1,400 loaded, with room for two
rsons and 20 pounds of baggage.

On the new ship the engine, with a self-
irter, will be located in the fuselage just
of the seat, with a drive shaft to the
opeller at the rear, and a second drive
aft to the rear wheel for road work. There
ll be hydraulic brakes on all three wheels.
ith the center of gravity midway of the
bin, well back of the front wheels, which
true also of this first model, brakes may
clamped on with no possibility of ship
sing over.

The designers also say it will be a simple
itter to rig up an automatic wing folding
rangement, so that the wings can be spread
tucked out of the way by merely pressing
button. Retractable wheels are another
inement for the next model.

About the only question the boys can't
swer directly is that old favorite of the
tential private owner: *How much will the*
ip cost? That depends on many imponder-
les . . . whether or not the ship is put
o production and, if so, at what rate of
oduction, future labor and materials costs,
w many people buy it.

Whitaker does venture, however, that the
anemobile can be built for the same price
the average private plane of conventional
sign in the same class plus whatever it
sts for the roadability equipment. In any
se, he says, the *Planemobile* has a far
tter chance of selling for a price within
pular reach than any helicopter.

It must be taken into account, too, in
king prices, that if the intent of the
anemobile . . . roadability . . . works out
planned. it will have a utility far beyond
ordinary private planes. With no need
stop on account of weather, or to leave
ship at the airfield between trips, entail-
time-killing and expensive commutation
other means between there and one's real
stination . . . with simple flight strips at
roadside, which Zuck and Whitaker be-
ve are feasible . . . this conveyance will
ve the same utility as an automobile.

It is estimated that the average man uses
car a total of 500 hours a year. The
anemobile operated that many hours
uld bring transportation by it down to
r cents a mile.

That would take it out of the luxury
egory to which the private plane still
gely belongs, and make it an economical
ssession, well worth its initial cost.

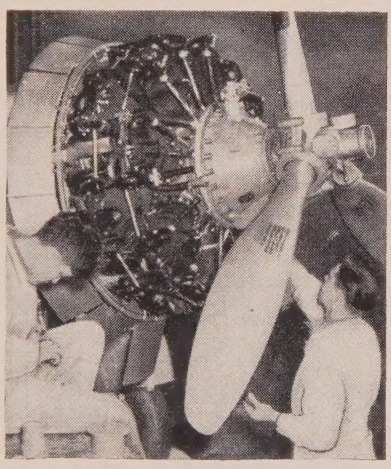
PICTURE CREDITS

COVER—The Cessna on floats, aptly named "The Flying Sportsman," is the proud possession of the man with the net. To be specific . . . Eben Robison whose story "Sails to Seaplane" is on page 42 of this issue. The young lady is Miss Nonnie Horton, an ex-WASP who holds every pilot's rating there is except transport ticket, and has over 3,000 hours. Cessna, too, is tops

Following list gives source of pictures in this issue
16—HANS GROENHOFF; 18, 19, 20—DON DOWNIE; 21—MARTIN & KELMAN, TULSA TRIBUNE, DES MOINES REGISTER & TRIBUNE, BEECHCRAFT, GEORGE LAZARNICK; 22—PHILA. EVENING BULLETIN, N. Y. DAILY NEWS; 23—N. Y. DAILY NEWS, STATESMAN NEWSPAPERS; 24—INSTITUTE OF AERO. SCIENCE; 25—ACME, INTERNATIONAL NEWS, PRESS ASSN., INSTITUTE OF AERO. SCIENCE; 26, 27—MABRY ANDERSON; 28, 29—A. U. SCHMIDT, JOHN T. WATTS; 30, 31, 32—DON DOWNIE; 33—MARTIN & KELMAN, INTERNATIONAL NEWS; 34, 35, 36, 37, 38—AL BACHMANN; 39—AL BACHMANN, HOWARD LEVY, NORTH AMERICAN; 41—MARTIN & KELMAN; 42, 43—MARTIN & KELMAN; 46—JACK HARDWICK; 48—ACME; 58—ACME.

MAYBE YOU'RE A WINNER!

AS THIS issue goes to press, the judges are busy sifting the thousands of entries to *FLYING SPORTSMAN & SKYWAYS* Ercoupe contest. That analysis will be completed within a few days, and the lucky winners will then be notified. Watch *FLYING SPORTSMAN & SKYWAYS* November issue for a public announcement of the winners of the three Ercoupes.



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ADDRESS.....

Full Stall & Wheel

(*Continued from page 41*)

straight for the runway after the final turn, we hold a normal glide until judgment relays approximately 15 feet altitude. (The best way to judge altitude near the ground is to focus the eyes a sufficient distance ahead so that objects appear to stand still. As speed decreases, this line of vision will become progressively shorter.) Now the maneuver becomes the power-off stall practiced so diligently in the air above. A little back pressure on the stick, and the glide is broken. Very smoothly and slowly this back pressure is increased to bring the plane through the level position to the three-point landing attitude at about five feet. As we lose flying speed and the plane begins to settle faster, the maneuver becomes one of *holding the plane off the ground* in the three-point attitude by smooth, continually increased back pressure on the stick. As the plane approaches the stalling speed the ailerons become decreasingly effective; the wings are kept level and directional control maintained with the rudder. Any attempt to lift a low wing with aileron will only tend to make it drop farther. At the instant of complete stall, the stick is full back and the plane should be no more than a foot off the ground. As the three wheels touch down, directional control is maintained with the rudder, and the stick is held completely back to prevent tail bouncing until the plane has slowed to taxiing speed. A tailwheel planted firmly on the ground is a positive aid to directional control.

This description assumes ideal conditions, which seldom exist in fact. Usually the maneuvers described above must be augmented by corrections for gusts or thermals. The whole performance is based on "feel," which includes not only information absorbed through the seat of the pants, but through the fingers, feet, eyes and ears as well. The sound of the slipstream and the idling engine and propeller, the response of the controls to pressure, the speed with which the ground seems to rush by underneath and come up to meet the wheels—all these enter into the execution of a good landing.

The Power Stall Landing: Sometimes the combination of obstructions and a short field may dictate a steeper than normal approach and, at the same time, a short landing roll. Or night or poor visibility may make difficult the estimation of altitude so that an approach in a nose-high attitude is necessary in order to avoid bouncing or worse. Soft surfaces such as snow, mud, sand or deep grass may make a slow pancake touch-down desirable as does landing in a strange field where the surface is uncertain. In all of these cases the power stall landing is the solution.

In flying the approach to a power stall landing, instead of closing the throttle completely on the downwind or base leg, the pilot reduces power to govern the rate of descent as desired, with the plane in approximately level attitude, and with an airspeed about the same as in a normal glide.

After the final turn is completed, the nose is raised until the plane is definitely in a three-point attitude, or even slightly higher; meanwhile, throttle setting is increased as much as is necessary in order to maintain this attitude and the desired rate of desce with positive control.

It will be seen that in this fashion a *lan ing* attitude is held all through the fi approach, with a minimum of forward spe In the case of a landing at night, power kept on until the plane touches ground. T throttle is then closed immediately and t aircraft quickly loses what forward spe it has. The stick should be brought ba and held (as in the normal landing) quickly as control responses permit, in ord to keep the tail on the ground. If the lan ing is to be made in snow, sand or mud, definitely tail-low position is desirable ju before contact in order to avoid touching the main gear and possibly nosing ov The throttle should be closed just befo touching down, and remaining back pressu applied on the stick at the same tim

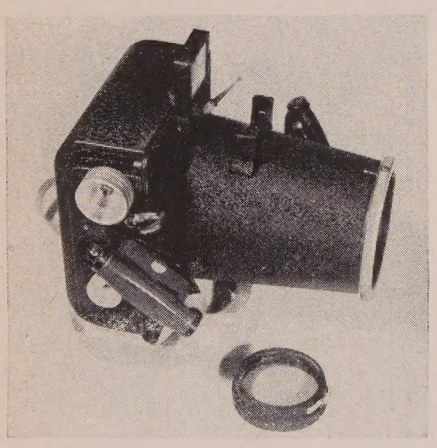
The Wheel Landing: The pretty grease j we described in the first paragraph com into its own in high winds and turbulent a Its extra speed gives more complete a positive control over gusts and offsets wi velocity. This added stability is enhanc by the level attitude. Wing icing also nec sitates a faster than usual landing as it caus an airplane to stall at higher speed th normally. To play safe when weather con tions threaten icing, keep extra speed un you are safely on the ground by making wheel landing.

The traffic pattern for this landing is larg than normal to accommodate the long fl approach that is used. Power is reduced little on the downwind leg. The altitude the airplane is just on the nose-low side level flight, and the rate of descent, as ways, is governed by the throttle. Airspe may be anywhere from 15 to 25 per ce higher than in a normal glide. Attitude a airspeed remain constant throughout t final approach. The slight flare out just b fore touching down should bring the nose to or just above level-flight position. The is no settling; the plane is flown right on the runway.

On contact the throttle is closed and the same time slight forward pressure exert on the stick to hold the wheels on the ru way. As speed decreases and the tail begi to drop of its own accord, the stick is broug back gradually to full-back position. T roll is handled as in a normal landing.

Crosswind landings. A crosswind landi is a variation on either the stalled three-poi landing or the wheel landing. Its traffic p tern differs from the usual procedure o in the crabbing necessary to produce a tr rectangular course over the ground. We r out of the final turn and establish a cr into the wind. One hundred yards or horizontally from our landing spot we swi the nose straight with rudder and at t same time use opposite aileron to dip t wing into the wind. The lowered wing co pensates for drift while the rudder kee the nose pointed down the runway. We ma tain this attitude through the flareout a into the stalled three-point position. In light or moderate crosswind the landing w be very similar to a normal three-point lan ing, with the windward wheel and tailwh touching just before the leeward wheel. a strong crosswind we would combine t approach with the power approach and ma our landing on the windward wheel fi with tailwheel and leeward wheel followi

Happy landings!



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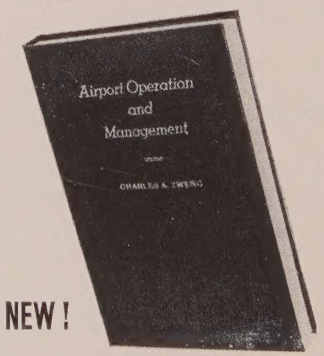

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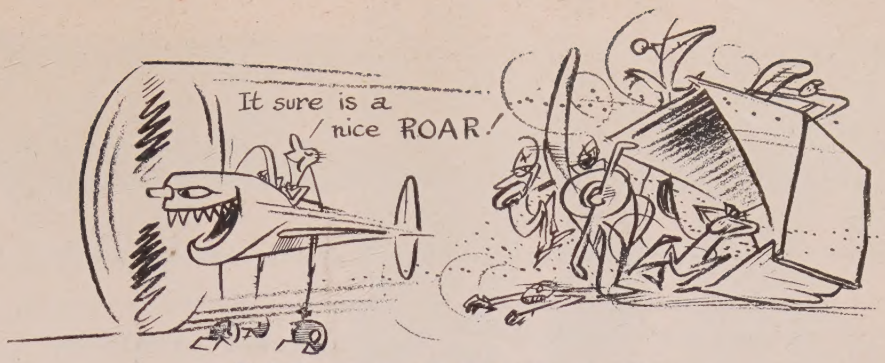
The Second Ten

(*Continued from page 55*)

a flight. Hoxey always dressed immacu-
ly for his flights. He was a gentleman
tor. Just how he was able always to look
n and neat was a mystery.
ohnstone was a trick bicycle rider in
leville before taking up aviation. At Bel-
t Park, Johnstone and Hoxey concen-
ed on altitude flying. They made one rec-
after another. When any other airman
e one of their records, they would almost
ediately establish a new one.
hose meets were held when it was current
tice for airmen to hold up a handker-
f—if it did not hang down straight, there
ld be no flying. On the last day of one
t the wind was blowing with almost hur-
ne intensity. Few pilots even attempted
ke-off and those that did cracked up, one
r another. Then the mechanics rolled out
es for the "Heavenly Twins." The crowd
not going to be disappointed; those that
started to leave the stands returned to
r seats. Several mechanics held the planes
le they were being tuned up and even
it looked as if they would overturn.
ohnstone and Hoxey took their seats,
ned the engines, motioned for the planes
e turned loose, and the flight was on,
of the most fantastic in early aviation
ory. With the speed of the wind about
al to the speed of the planes, the airmen
t straight up in the air like balloons. As
gained altitude, the wind became
nger and little by little the planes started
ing backward.
he planes continued to rise and soon the
d was so strong that they moved back-
d quite rapidly. Never in aviation history
such flying been seen. Always headed
t, the planes moved out of sight to the
. Johnstone finally landed at a point 50
es to the east of Belmont Park, Hoxey
farther to the east, and neither pilot had
ded in any direction but west. That flight
the talk of airmen and aviation circles
many months.
ohnstone like Ely, was always trying to
the crowd more and better thrills. He
killed in an exhibition flight at Denver
1910. Many pilots talked about looping
nes in those days but no one knew how
go about making a loop. As a matter of
there was much discussion as to whether
hould be an inside or outside loop. Spec-
rs on the ground who saw Johnstone's
ident, gave a very good description of
eone trying to make an outside loop—an
al maneuver that was not to be accom-
hed for many years thereafter.
loxey was seemingly not affected by the
of his running mate. He continued his
t flying and altitude-record attempts with
e vigor than ever. The altitude record
then 9,750 feet, made by Johnstone in
t famous backward flight at Belmont
k. Those flights were made without
gen. In Los Angeles, a month after John-
ne's death, Hoxey went up after a new
ord. Everything went well until he started
n. Then the plane seemed to fall out of
trol. Hoxey had lost consciousness. He
attained an altitude higher than any
er man but his plane crashed and Hoxey
killed. The barograph showed a reading
11,474 feet. (*The 3rd and last of this
es will appear in the October issue.*)



PILOTS may be fresh-air fiends but they don't cherish the Dilbert who blasts 'em

Dilbert

(*Continued from page 44*)

Frantic application of more right aileron only brought the right wing up higher. The copilot thought it was all a joke until he heard the pilot's purple language and saw the contortions he was going through.

In swift succession, the pilot tried every possible combination of throttle, wheel and rudder. He angrily shook the yoke, to make the plane behave. In desperation, he finally gave it left aileron and was agreeably bewildered to see "that damn right wing" go down. Just then she hit the water—in level flight.

The pilot's remarks after landing aren't printable. They ended with, "Those blankety blank so-and-so's crossed the aileron controls on me." The part about the ailerons, at least, was true. With only 50 feet of altitude, not one pilot in a thousand would have corrected for this before "slipping in." Call it luck if you wish; to me it was a remarkable feat of airmanship.

I'll bet my right eye against a wooden nickel that as a result of this near-costly lesson, our Navy friend never has flown another ship without carefully checking to see that the control surfaces move in the right direction.

Back to our engine again, but don't start it yet. The next thing to do is see that the altimeter is set to the proper altitude. And if there is any possibility they may be needed, check your navigation lights. Test your radio, too. Set the carburetor heat control on COLD, the mixture control in the FULL RICH position, close the throttle, and turn the gas valve ON. If a spark control is used, see that it is set at the recommended starting position.

The carburetor should be flooded by pumping the throttle, or the engine should be primed, depending on your engine. Priming is always necessary to start a cold engine, but is seldom needed on an engine recently run. The engine should be started as soon as possible after priming, to prevent the prime running down the cylinder walls. Never try to start your engine alone if you have to swing the prop or use a hand crank. Civil Air Regulations require that a competent operator be in the cockpit whenever an aircraft engine is started.

The following is the solemn, standard ritual for starting an engine with a hand crank. There are slight variations if you have an electric starter or must swing the prop.

You . . . "Gas on, switch off."

Mech. . . . (Cranks starter, then says;) "All clear—contact."

You . . . "All clear—contact." Then (*never before*) turn switch ON.

When the engine kicks over, "crack" the throttle to "catch" it. There is a knack to starting aviation engines, just the same as for automobile engines. Each individual engine has its own peculiarities and even these vary under different conditions. Proficiency comes only with wide-awake practice, and lies within any pilot's power.

If the oil pressure gauge doesn't register pressure within 30 seconds after starting, cut the switch and start looking for the trouble. Warm up your engine at fast idling speed, usually 800 to 1000 rpm. When the oil temperature has risen to "minimum", showing that oil is circulating properly, you are ready to check magnetos. First, turn the switch momentarily to OFF, to insure the engine will stop firing when the mags are grounded. Be sure to "catch" it again and gradually increase throttle to cruising speed. And don't forget to hold your stick back when you rev up.

Now turn the ignition switch from BOTH to LEFT and watch the tachometer. If it falls off more than is allowed for your engine, usually 75 to 100 rpm, there is something wrong. Next, turn the throttle back to BOTH and pick up the lost RPM, after which make a similar check on RIGHT. With the switch again on BOTH, check full throttle rpm. Engines never should be run at "maximum permissible ground speed" in excess of 20 or 30 seconds.

If everything checks O K, that's it!

You could write a book on the *why's* and *how's* of correct engine starting, but even this synopsis should convince you that you don't just jump into the cockpit and step on the starter. You first get good and ready. Approximately 75 per cent of all accidents are due to pilot error, such as failing to carry out some of the precautions here listed. This is sometimes due to ignorance, but more often it is because the pilot has grown careless. When you do everything correctly, nothing goes wrong. If you aren't careful, however, this will gradually lull you into a false sense of security, à la Dilbert. Brother, that's when you are vulnerable!

Every engine is designed to operate within certain ranges. The manufacturer is vitally interested in seeing that his engines give maximum service and dependability. He has prepared a handbook for each type, to insure this end. Study yours thoroughly, believe what it says and follow it religiously. Remember, in aviation, your engine is your best friend, so treat it like the cherished possession that it is. PAMPER IT!

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PILOT'S $10 gold rimmed sun glasses, $4. Rich A-2 leather (Pony), lightweight ja ets, not surplus, $24.50. Pilot's A-6 leath fleece lined boots, zipper type, used, $5. A-9 14" leather fleece lined gauntl (gloves), new, $5.95. New safety belts (lig plane type), $2.00. New compasses, $7. Navigation lights, Grimes, $6.00 for set three. Aero Parts Supply, Municipal A port, Houston, Texas.

BATTERIES—new, 12V, 34 Amp. 10" high, 9 long, 5¼" wide. Fits AT19 Stinson, PT etc. $19.75 dry or $21.75 fully charged rea to go, guaranteed. Also, 24V, AN31 shielded, size 13⅝" long, 8¾" high, 9⅛ wide. $24.75 dry or $26.75 fully charg Flying Equipment Co., 1641-45 W. Wolfr St., Dept. S, Chicago 13, Ill.

AIRCRAFT TIRES—5.00x4 $5.00 each, 6.0 $8.50, 7.50x10 $10.00, 8.50x10 $11.00, 12.5 4½ $5.00, 27" $14.00, 30" $20.00, 33" $22. Tubes for above available. Complete n wheels, tires and tubes for AT6 & BT13 $68.00 per set. Flying Equipment Co., De S, 1641-45 W. Wolfram St., Chicago 13,

A2 FLIGHT JACKETS, Army type, new, g uine horsehide leather, dark brown, z pered, cloth lined, elastic-knit waistba and cuffs $18.75 or same jacket with mou fur collar $20.75. State size. Many ot items. Flying Equipment Co., 1641-45 Wolfram St., Dept. S, Chicago 13, Ill.

NAVY INTERMEDIATE FLIGHT JACKETS, n dark brown goatskin leather, bi-swing ba zippered, celanese lined, elastic-knit wa band and cuffs $35.00. Flying Equipm Co., 1641-45 W. Wolfram St., Dept. Chicago 13, Ill.

HELMETS—A.A.F. ANH-15, new, tan sum gabardine with sponge rubber earcups $1 or A-11 kidskin leather, chamois lined w earcups $3.45. State size. 1641-45 W. W ram St., Dept. S, Chicago 13, Ill.